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ABSTRACT

This report examines some of the costs of higher education and the benefits Illinois citizens receive in return. The study examines both public and private higher education and measures the impact on a state-wide basis. Data come from the Integrated Postsecondary Education Data System and data collected by the Illinois State Board of Higher Education. Data contain direct costs of higher education, including costs to taxpayers and students, and costs paid by donations and endowments. The report highlights seven benefits of higher education: monetary benefits to students, benefits from university spending, benefits from student and visitor spending, additional state and local tax revenue, nonmonetary benefits to students and society, added productivity to society, and public service and outreach programs. Ten appendixes include a list Illinois colleges and universities; lifetime value of additional earnings; enrollment in Illinois colleges and universities, fall 1997; degrees and certificates awarded, academic year 1996-97; expenditures by Illinois colleges and universities; faculty and staff at Illinois colleges and universities, fall 1997; visitor survey; total expenditures by visitors, fiscal year 1999; direct and indirect expenditures and employment generated by student and visitor spending, fiscal year 1996; and calculation of specific nonmonetary benefits. There are illustrative vignettes throughout the report. (Each section of the report contains endnotes.) (SM)

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Building the Economy, Shaping Society

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ILLINOIS HIGHER EDUCATION:
Building the Economy, Shaping Society

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EXECUTIVE SUMMARY

The Illinois higher education network is the fourth largest in the United States, with almost 750,000 enrolled students. This report examines some of the monetary and nonmonetary benefits that accrue from this system.

- **The typical student receives very large monetary benefits from his or her schooling.**
  - Earning a bachelor's degree provides the average student with over $590,000 in future earnings. This is measured as the present value of the annual increases, or the amount that would need to be invested to earn the same amount in future years. Similarly a professional degree provides a present value to the student of almost $1.25 million in future earnings.
  - The total gain to all students from one year's activity by Illinois' higher education institutions is $55 billion.

- **Illinois colleges and universities directly aid the state economy by hiring people and spending money.**
  - Annual expenditures total $10 billion and account for 116,000 full-time-equivalent jobs.
  - Of these totals $2.8 billion in spending and 30,000 jobs come entirely from sources outside of Illinois and would not have accrued to Illinois in the absence of the universities.
  - These expenditures also stimulate additional economic activity. Total expenditures generated equal $28 billion annually with close to $7.5 billion originating outside the state. These expenditures generate over 350,000 full time equivalent jobs, 90,000 of which are generated from out-of-state sources.

- **In addition to spending by the universities, there is considerable economic activity generated by the presence of the universities.**
  - Students spend a total of nearly $4 billion each year while attending Illinois schools, creating 100,000 jobs. Of this spending over $560 million is generated by students who come to Illinois from other states, and another $200 million is generated by international students.
  - Visitors to students also spend large sums of money. Total spending by these visitors exceeds $520 million annually with more than $150 million coming from out of state.

- Total expenditures from students and visitors including those stimulated by the direct expenditures equal nearly $15 billion annually and create 230,000 jobs. Of this, $3 billion in spending and 48,000 jobs are generated from out-of-state sources.
- The increased earnings by students leads to increased tax receipts from those who stay in Illinois. One year's activity by Illinois schools generates $5.9 billion in present value of future receipts, well in excess of the $2.5 billion that the state spends each year on higher education.

▪ Higher education also has substantial benefits outside of the financial realm.

- Having a college education contributes to better health, a greater sense of civic responsibility, and an increased likelihood of employment.
- We estimate that 15,000 fewer Illinois adults die prematurely each year because they went to college. Six hundred thousand more Illinoisans are employed each year and the unemployment rate is lower because of the education received by the current working-age population in past years.

▪ Illinois higher education increases the productivity of the nation.

- Its graduates' contributions in the workplace lower the price of goods and services we buy. It also adds productivity through new innovations and inventions.
- In total, the increase in U.S. productivity generated by one year's activity by Illinois' colleges and universities exceeds $24 billion.

▪ Illinois higher education serves Illinois through its libraries and many public service and outreach programs.

- Our conservative analysis shows that these activities generate over 8 million visits to colleges and universities each year.

INTRODUCTION

The Illinois higher education system is complex and extensive, and impacts the state in countless ways. Across Illinois, colleges and universities have become vital participants in the community and the economy, and the students they educate go on to become successful and productive members of society. We are fortunate to have some of the finest colleges and universities in the world right here in Illinois. It is important that we recognize the role played by our educational institutions and ensure their continued success in the future.

OUR ILLINOIS INSTITUTIONS OF HIGHER LEARNING:

- Develop the state's workforce.
  - Prepare new workers to enter the labor force in technical and professional fields.
  - Retrain workers for new jobs.
  - Provide continuing education and training in new and evolving technologies.
  - Offer classes and workshops for adult enrichment.
- Through research activities develop new technologies, products, and services.
  - Provide valuable learning experiences for students.
  - Transfer the technologies to business and industry.
- Attract new businesses to the state, and help retain businesses already here.
- Serve as community resources by assisting schools, community groups, state and local governments, industries, and businesses through a multitude of outreach programs.
- Offer cultural, artistic, and athletic events and programs to their communities.
- Provide access to college and university resources to businesses, elementary and secondary schools, government agencies, industries, and individuals.
- Employ 143,000 people in professional, technical, and clerical fields.
- Purchase goods and services totaling $10 billion in the Illinois market.

The Illinois higher education network is the fourth largest in the United States, following only California, New York and Texas. During the 1998-99 academic year 732,000 individuals were enrolled in the state's colleges and universities. More than seven million people of all ages participated in or attended programs at Illinois colleges—everything from noncredit classes, athletic events, theatre and musical performances, art gallery

exhibits, and programs for elementary and secondary students.

Each year the State of Illinois invests a considerable amount of money in higher education—more than $2 billion per year since 1996. In this report we examine some of the costs of higher education and the benefits Illinois citizens receive in return. Our study encompasses all of higher education in the state, both public and private, and measures statewide impact.

PURPOSE

The purpose of our study is to describe the economic and other benefits of one year of operation of Illinois colleges and universities. We determine the total benefits that accrue to Illinois from all schools, rather than attempting to calculate the additional return from a one dollar increase in funding either to the entire higher education sector or to any part of it.

Different categories of schools serve different populations and different needs, and all of these services are beneficial. We break down our data and results into the four categories of schools detailed below because there are often interesting differences, and because the method of calculating results sometimes varies by type of school. For instance, the percentage of in-state vs. out-of-state students varies greatly by category of school, so the calculation of in-state-generated vs. out-of-state-generated revenues must take those differences into account.

Our study is not meant to compare the relative merits of different types of schools, and readers are not encouraged to use our results to make those comparisons. Readers should look at the bottom line results and understand our conclusion: that all higher education, regardless of the size or ownership of the school, has great value to the citizens of the state of Illinois and deserves investment and support.

ILLINOIS' HIGHER EDUCATION SYSTEM

The Illinois Board of Higher Education (IBHE) has overall responsibility for the state's higher education system. It recommends funding to the Governor and the Legislature and provides oversight for elements of the system. IBHE divides the degree-granting higher education institutions into four primary classifications. We have used these classifications as well, and throughout this report we provide separate estimates for the four categories of universities and colleges in the state.

Public Universities

These twelve campuses range in size from 38,000 students at the University of Illinois at Urbana-Champaign to 4,500 students at the University of Illinois at Springfield.

Public Community Colleges

Forty colleges serve over 340,000[1] students, from the College of Du Page with 29,000 students to Spoon River College with 1,900.[2]

Private Non-Profit Colleges and Universities

DePaul, Northwestern, Loyola, and the University of Chicago are the largest of these 100 schools with up to 18,000 students, while several of the smallest have fewer than 40 students. This group encompasses schools with a variety of educational missions, from two-year colleges to several for post-baccalaureate study in specialized professional fields.

Private For-Profit Colleges

These 17 schools (21 campuses) have a total of about 9,000 full-time students. DeVry Institute of Technology is the largest of these proprietary institutions which include schools of art, business, cooking and hospitality, design, psychology and technology.

The Illinois Board of Higher Education recognized 179 degree-granting institutions as of 1996. We chose to limit our analysis to the 138 IBHE-recognized schools that had provided relatively complete data to the Integrated Postsecondary Education Data System (IPEDS) of the National Center for Education Statistics. The 41 omitted schools (26 private non-profit and 15 private for-profit campuses) had a total enrollment of about 10,000 students, only 1.4 percent of Illinois' total. Appendix A provides a list of the institutions included in this study, and maps of their locations, as well as a list of excluded schools. Throughout this report, in all tables and data, the term "Illinois Total" refers to the 138 institutions included in this study. In addition there are at least 245 technical and vocational schools that award certificates for one year or less of study. Although these schools provide valuable technical and/or continuing education training to many of our state's citizens in a wide variety of fields[3], they are not recognized by IBHE as degree-granting institutions. These schools are excluded from this study because they do not report comparable enrollment, staff, and financial data to either the state or federal agencies.

DATA

Our primary sources of data about individual institutions and higher education as a whole were the Integrated Postsecondary Education Data System (IPEDS) surveys and data collected and published by the Illinois Board of Higher Education (IBHE). The IPEDS surveys are conducted annually or biannually by the National Center for Education Statistics, U.S. Department of Education. IBHE serves as the state coordinating agency for the IPEDS surveys and publishes some IPEDS data in its annual *Data Book on Illinois Higher Education*. Because of changes in reporting requirements, the most recent IPEDS financial data available to us were for fiscal year 1996. We incremented the financial data to fiscal year 1999 using appropriate cost indices.

In addition, during the spring of 1999 the Center for Governmental Studies at Northern Illinois University, under our direction, conducted a

survey of students at Illinois universities to determine the level of spending by their visitors and by prospective students.

COST AND BENEFITS OF HIGHER EDUCATION

We report the direct costs of higher education including specifically the cost to taxpayers, cost to students, and costs paid by donations and endowments. The benefits of higher education, however, are more varied. We specifically look at seven types of benefits:

Monetary Benefits to Students

Numerous labor market studies have demonstrated that college attendance raises the income of students compared to persons who do not attend college. Using data on observed earnings we are able to assign an added income value for each year of college for those who attend college but do not graduate. We also estimate an additional earnings increment for those who obtain a degree. We calculate the value of the future income for each student and then estimate the total additional monetary benefit to students generated by a year of operation of the colleges and universities in the state.

Benefits from University Spending

Colleges and universities spend considerable sums each year that directly provide jobs and economic benefits to communities and to the state. In addition, we evaluate the multiplier effect as each dollar stimulates additional spending in Illinois.

Benefits from Student and Visitor Spending

Students at universities spend significant amounts of money in the local communities. This is incremented further by visitors to the university who come to decide whether to attend, to visit children or friends who are at school, or to attend cultural or athletic events. In addition, there are many official visitors who spend money in the communities: conference and workshop attendees, guest speakers and performers, and business and industry representatives who visit campuses to recruit employees. We estimate the direct and indirect impact of two kinds of visitors' expenditures as they stimulate additional economic activity: visitors to students and precollege visits by students and families.

Additional State and Local Tax Revenue

Increased incomes add to the base of taxable income, sales, and property. We determine the value of taxes that result from the higher income of students.

Nonmonetary Benefits to Students and Society

In addition to the monetary gains, higher education provides improved health and a variety of other benefits that are not purely economic. We provide estimates of the total impact of some of these benefits.

Added Productivity to Society

Every year, university research develops inventions and new ideas which can then enhance the productivity of society. In addition, graduates entering the work force have improved knowledge that they put to work in their new employment. We estimate the specific gains from the added productivity that results from colleges and universities.

Public Service and Outreach Programs

Illinois' colleges and universities provide a multitude of cultural, artistic and athletic events to their communities. They provide programs for all ages—from preschoolers to retirees—and in a wide variety of areas—from art to the sciences, from landscaping to banking. The institutions provide continuing education programs for police, fire, and emergency services personnel. We will describe many of these programs and give an estimate of the number of citizens impacted by them.

This report compares the benefits of the system of higher education for the students, the community, and the state to the costs of the system. While college is usually treated as an investment, both by families and by the state, this report proves just how good that investment can be. Even our conservative methods result in substantial economic returns, which when combined with the less tangible nonmonetary benefits make higher education in Illinois one of the best investments around. Our colleges and universities are such an integral part of Illinois' economic and social structure, we cannot imagine the state without them.

ENDNOTES

1. These enrollment figures do not reflect the large number of students enrolled in non-credit programs.

2. Our 1997 data include Metropolitan Community College, which was closed in December 1998. It is now known as the East St. Louis Community College Center and is under the control of a consortium of community colleges.

3. Several of these schools award certificates in health career fields, including practical nursing, histology, radiography, radiology, respiratory care, surgical technology, and dietetics. Some schools provide continuing education for state certification in fields such as real estate and insurance. Others provide training in fields such as travel, aviation, barbering, hair design, cosmetology, bartending, business, art, court reporting, truck driving, scuba diving, secretarial science, acting, broadcasting, drafting and design, languages, violin making, consumer electronics, horse shoeing, professional bowling, and dog grooming.

Matt Rodriguez Changes Chicago Police Department with Technology Initiatives, Management Skills

In October of 1993, Matt Rodriguez, Superintendent of the Chicago Police Department, put forth his vision for a reinvented department which "mobilizes both government and community resources in a new and constructive partnership toward reducing crime, fear, and neighborhood disorder" (Chicago Police Department, "Together We Can"). Under his leadership, the nation's second largest police department would become a model of successful community policing and technology initiatives.

Rodriguez was appointed to the Superintendent's position in 1992 after 33 years with the department. He grew up in the ethnically diverse Back-of-the-Yards neighborhood on Chicago's south side, the son of a Hispanic father and a Polish mother. Like many police officers hoping to advance to command positions, he attended college while working full-time. He graduated from Wilbur Wright Community College in 1973. He then earned a bachelor's degree from Roosevelt University in 1975, and went on to receive his master's in public administration (MPA) from Roosevelt in 1976. He later attended management training at the Northwestern University Traffic Institute.

Roosevelt University, with campuses in downtown Chicago and in Schaumburg, established its MPA program in 1964. Like many of Roosevelt's programs the MPA program is designed for professionals hoping to enhance their skills and for people wishing to change careers. The course of study provides students with the skills and context unique to government or non-profit organizations.

As Superintendent, Rodriguez wasted no time in putting his management skills to good use. Under his guidance, the department embarked on a revolutionary project: the Chicago Alternative Policing Strategy. Before CAPS, operations were primarily reactive, driven by 911 calls. Under this new community policing strategy, police officers would work in partnership with the community and other government and service agencies to address the factors which cause crime and fear. The department's operations were redesigned from the ground up, based not on tradition but rather on sound decisions using objective data and officer and community input.

A key to the CAPS initiative is technology, and Chicago's police department, under Rodriguez, was at the forefront. Rodriguez oversaw the installation of the Automated Fingerprint Identification System and the department-wide rollout of portable data terminals in each squad car. In addition, he directed the development of a user-friendly crime mapping system for police officers which is currently in use in every police district.

Crime in Chicago has dropped steadily since 1992, and while the causes of this decline are numerous, the mayor and the police department have been quick to point to CAPS as an important contributor. By the time Rodriguez retired from the department in 1997, he had set in motion the new philosophy and procedures which would carry the Chicago police into the next century. Computers and community policing had become part of the daily routine, and CAPS was a nationally-recognized success.

I. MONETARY BENEFITS TO STUDENTS

Students receive a very large monetary gain from attending college. In our analysis, we determine the additional income that a student would earn each year in the future from attending college and determine the present value of this income stream. The present value is the amount the student would need to invest at the time of graduation to achieve the same additional future income. We next considered the age and gender of the student, the expected years of work, and the degree to which the earnings gain comes from personal factors rather than college. The result provided us with a picture of the gain from college education. In addition, we considered the number of students at each level of education and degree program to find the total gain from Illinois education to all students.

ADDITIONAL VALUE GAINED BY STUDENTS

Average earnings for each year of work

Our analysis of the monetary gains to students employed U.S. Census data on the average person's earnings by age, gender, and education.[1] Figures I-1 and I-2 display the average earnings of U.S. males and females in 1997 based on their education and age.[2]

As expected, higher levels of education lead to higher annual earnings; for example, an average 40-year-old man with a high school education earns about $34,000 each year, while for those with a bachelor's degree, doctorate, or professional degree the earnings increase to $58,000, $94,000, and $127,000 respectively. In general, women earn less than men, and earnings for both genders rise to age 50 or 60 and then fall. These data provided the basis for our analysis, but several additional steps were needed to find the value to students.

Figure I-1. Male Average Earnings by Age: 1997

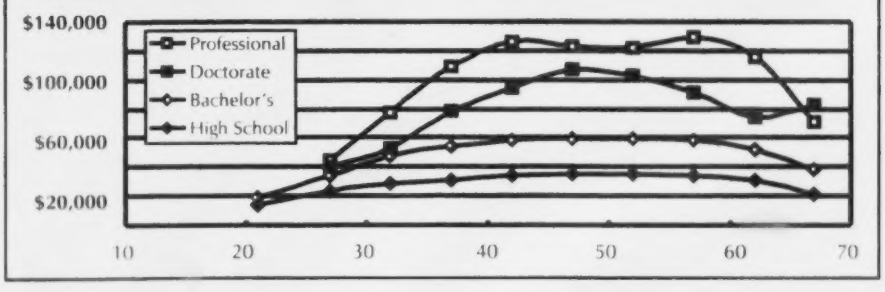
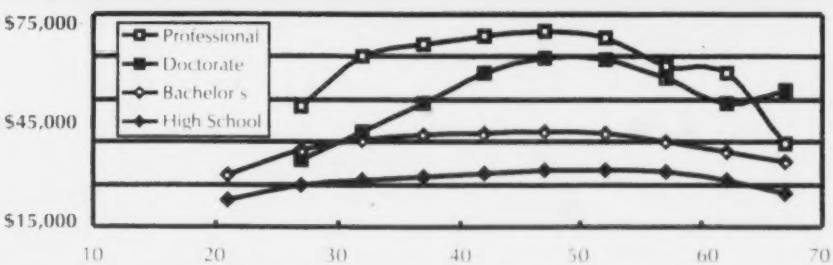


Figure I-2. Female Average Earnings by Age: 1997



Present value of future earnings

Next, we needed to calculate the present value of future earnings resulting from higher education. Because economic growth will increase income for all subgroups in the future, we increased future earnings by the growth rate, and then discounted those future values to the present. Economic literature tells us that earnings growth and discount rates vary but the difference (the net discount rate) is stable and near zero. Following the literature we decided to use a net discount rate of -0.5 percent.[3]

Besides the net discount rate, we needed to know how long our students would continue to work. We utilized expected work life values, found in tables similar to those for life expectancy, to estimate the value of future earnings.[4] For example, a 25-year-old man with a college degree is expected to work 34.9 years or to age 59.9. With a high school education he typically works 32.7 years or to age 57.7.

Combining the net discount rate and work life expectancy data with the average earnings for each year of work, we calculated the present value of our students' lifetime earnings. For instance, a 25-year-old man with a high school education has a present value of future earnings of $956,774. For a similar man with a bachelor's degree, the present value is $1,726,846. We calculated these values for each year of age, education level and gender.

Value of a year of school vs. value of a degree

We then separated the value of each year of education from the value of the actual degree. For our 25-year-old male, we found that one year of additional college added $83,000 to the present value of his future earnings, after subtracting the lost earnings from the one year he was in college and not in the labor force. This value could be compared with the cost of the education to the student. We estimated the value of one year of higher education as half of the increment from high school education to "some college" in Census Bureau statistics.

In a similar fashion we subtracted the value of a high school education and the lost earnings while attending college from the total value of a bachelor's degree to find that the incremental value of the degree is $693,000. We then subtracted the value gained from the years spent in school from

the total value of the education to find the "sheepskin effect," the value of the degree itself beyond the value of spending time in college. While the traditional view of undergraduate education is that it requires four years in school, we used the actual average time to degree in Illinois schools, which is 4.87 years.[5] For our example 25-year-old male, the "sheepskin" is worth $308,000.

The data tell us that older students have a shorter time span to work, and therefore in general gain less than younger students do. Also, for a variety of reasons, on average women earn less than men do.

Fringe benefits and 1999 dollars

In addition, we incremented the salary levels from 1997 to 1999 dollars, and added the value of fringe benefits earned by workers.[6]

Fraction of earnings caused by education

The last critical step was to separate the value that is brought about by the education process from the innate intelligence of the student.[7] We employed the outcomes of the economic literature that shows that 88 percent of the observed income gain of persons with a higher education is a direct result of the education, while the remaining 12 percent is due to the innate ability of the person.

Average Illinois student's gain

For the average student in Illinois, we found that one year of school adds $64,190 to lifetime earnings. The total value of a bachelor's degree is $292,000 for the sheepskin alone and, after adjusting for the time spent getting the degree, averages $591,000. We also calculated the value of advanced degrees; in our analysis, we computed the value of a master's or professional degree as a supplement to a bachelor's degree. Persons with doctorates were assumed to have already earned a master's. These summary values are averages of the gains by sex and age that were the basis for our detailed analysis. Our findings are shown in Table I-1. The average value of the sheepskin weighted by the number of each type of degree is $216,000.

The reader will note that men receive a higher return to each year of education than women. However, women receive a larger return at the time they receive an associate's or master's degree. In our view, this indicates that men receive a major part of their benefit from attending school, while women receive most of their benefit from graduation.

Table I-1. Lifetime Value of Additional Earnings for College Years and Degrees[a]

	Female	Male	Average	
One year of college	$41,346	$91,913	$64,190	
Sheepskin Effect				**Total Value**
Associate's Degree	$116,427	$17,772	$79,228	$207,609
Bachelor's Degree	$263,062	$328,215	$292,413	$590,648
Master's Degree[b]	$76,451	$36,189	$58,922	$187,303
Doctorate[b]	$191,164	$367,515	$297,728	$426,109
Professional Degree[c]	$657,743	$1,235,390	$991,734	$1,248,495

a. Appendix B contains a more complete table of values of degrees. Values include fringe benefits and are expressed in 1999 dollars.
b. In addition to the value of a master's degree that we assume has already been earned.
c. U.S. Census definition: "professional school degree (for example, MD, DDS, DVM, LLB, JD)."

We also calculated the value of specific degrees, including bachelor's in engineering and business, and medical, law, and business graduate degrees. These degrees are specified in Appendix B. In this process, we employed Census data on the earnings of specific types of workers[8] as well as data from the University of Illinois on actual earnings of graduates.[9]

NUMBER OF STUDENTS AND DEGREES

We now know the value gained by each student as a result of higher education. Before we were able to estimate the total value to all students, we needed to know how many students and degrees there are. The Illinois higher education system serves a large number of

Table I-2. Full-Time Equivalent Enrollment in Illinois Colleges and Universities, Fall 1997

Level		Public Universities	Public Community Colleges[a]	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Undergraduate	Male	60,670	80,207	38,642	4,722	184,240
	Female	68,614	105,475	53,054	2,119	229,262
	Total	129,283	185,682	91,696	6,841	413,502
Graduate	Male	14,774	0	20,864	553	36,190
	Female	16,946	0	20,950	345	38,240
	Total	31,720	0	41,813	898	74,431
Grand Total[b]		161,003	185,682	135,837	7,739	490,261

Source: Integrated Postsecondary Education Data System, National Center for Education Statistics, *Fall 1997 Enrollment Survey*; and Illinois Board of Higher Education FTE statistics. Data are for institutions listed in Appendix A. Detailed data on enrollment headcounts can be found in Appendix C.

a. Does not include non-credit programs.

b. Grand total includes students not classified by their schools.

Table I-3. Degrees Granted by Illinois Colleges and Universities, 1996-1997

		Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Associate	Male	266	8,410	469	553	9,698
	Female	157	14,598	1,174	93	16,022
	Total	423	23,008	1,643	646	25,720
Bachelor's	Male	13,879	0	8,817	607	23,303
	Female	15,141	0	13,021	263	28,425
	Total	29,020	0	21,838	870	51,728
Master's	Male	4,207	0	6,380	255	10,842
	Female	5,694	0	8,199	168	14,061
	Total	9,901	0	14,579	423	24,903
Doctorate	Male	798	0	729	0	1,527
	Female	498	0	502	0	1,000
	Total	1,296	0	1,231	0	2,527
Professional	Male	599	0	1,856	0	2,455
	Female	510	0	1,281	0	1,791
	Total	1,109	0	3,137	0	4,246
Grand Total		41,749	23,008	42,428	1,939	109,124

Source: Integrated Postsecondary Education Data System, National Center for Education Statistics, *1996-1997 Completions Survey*. Data are for institutions listed in Appendix A. More detail on degrees and certificates can be found in Appendix D.

students: Table I-2 summarizes the total students enrolled and Table I-3 shows the number of degrees granted by Illinois colleges and universities. In our analysis we employed the complete tables with data by type of degree, type of college or university, and gender of the students. We limited our financial calculations for community colleges to students who were in either senior-college transfer, occupational, or technical programs.

TOTAL PRESENT VALUE TO ALL STUDENTS

Finally, we were able to combine the data on the present value of a degree with data on the number of students, and determine the present value of a year of higher education to all students in Illinois. The outcome is shown in Table I-4.

Another way of illustrating the result is to take the total number of full-time equivalent students, 490,000, and multiply it by the average value of one year of college after correcting for causality, $64,000, to get a total value gained by those students for attending college of $31 billion. In addition, take the total number of degrees, 109,000, and multiply it by the average value of a sheepskin, $216,000, to find the total value of the degrees, $24 billion. These figures together add to the total present value to the students, $55 billion.

This result is worth repeating. In one year's time the students at all Illinois colleges and universities gain $55 billion dollars in future earnings that they would not have received had the colleges not existed.

Table I-4. Present Value to All Students of One Year's Education in Illinois Colleges and Universities ($ billions)

	Present Value
Public Universities	$22.31
Public Community Colleges	$10.91
Private Non-Profit Colleges & Universities	$20.22
Private For-Profit Colleges	$1.13
Illinois Total	$54.59

ENDNOTES

1. U.S. Bureau of the Census, Current Population Reports: P60-200, Money Income in the United States: 1997; P60-197, Money Income in the United States: 1996; P60-193, Money Income in the United States: 1995, Average of three years' data, indexed to 1997.

2. To maintain readability, we omit "Some College" and "Master's Degrees" from these figures.

3. Gary A. Anderson and David L. Roberts, "Stability in the Present Value Assessment of Lost Earnings," *Journal of Risk and Insurance*, vol. 56, no. 1, March 1989, pp. 50-66.

4. James Ciecka, Seth Epstein, and Jerry Goldman, "Updated Estimates of Work-Life Expectancies Based Upon the Increment-Decrement Model," *Journal of Legal Economics*, vol. 5, no. 1, Spring/Summer 1995, pp. 1-33.

5. Integrated Postsecondary Education Data System, National Center for Education Statistics, *1997 Graduation Rate Survey*, based on 1991 cohort of full-time bachelor's or equivalent degree-seeking undergraduate students.

6. Fringe benefits are calculated from U.S. Department of Labor, "Employer Costs for Employee Compensation - March 1997," USDL 97-371.

7. Orley Ashenfelter and Cecilia Rouse, "Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins," *Quarterly Journal of Economics*, vol. 113, no. 1, February 1998, pp. 253-284. Our conclusion is derived from Table III, pg. 265.

8. U.S. Census Bureau, *1990 Census of Population and Housing*, SSTF22 Earnings by Occupation and Education: PB03B, mean annual earnings in 1989 by sex, by work status in 1989, by age, by educational attainment.

9. University of Illinois Office for Planning and Budgeting, *Survey of 1988 Degree Recipients*, Unpublished data, 1998.

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II. BENEFITS FROM COLLEGE AND UNIVERSITY SPENDING[1]

Higher education's most important contribution to the Illinois economy is to train workers in the general and specialized skills needed by businesses and industries in the state. However, even if there were no long-term benefits from the training universities and colleges furnish, the higher education sector would still be a significant component of the Illinois economy. Higher education provides employment for more than 143,000 Illinoisans[2], and Illinois colleges and universities raised in revenue and spent more than $9.7 billion in FY 1996 (in 1999 dollars).[3] In this section we explain some of the many ways in which higher education spending affects the operation of Illinois' economy.

REVENUES

Revenues from a wide variety of sources are required to support Illinois' higher education activity. Detail on the dollar amount of revenues from various sources is shown in Table II-1. Over $2.6 billion, 27 percent of the total revenue, comes from out of state.

EXPENDITURES

The revenue raised by higher education institutions enables them to hire faculty and staff, maintain buildings and grounds, and provide materials to students. Through its purchases of goods and services from Illinois businesses the higher education sector stimulates a great deal of economic activity. The direct economic impact includes the total spent by higher education institutions in Illinois for goods and services, $6.1 billion, and another $4.2 billion for salaries and wages.

Illinois colleges and universities raised in revenue and spent more than $9.7 billion in FY 1996.

Table II-2 shows that expenditures by higher education in Illinois for FY 1996 (in 1999 dollars) were more than $10.3 billion—approximately $2,400 for each of Illinois' 4.3 million households.[4] The total includes capital expenditures and therefore exceeds the total in the revenue table above.[5]

These purchases of goods and services affect nearly every industry in the state, stimulating sales and employment in industries from auto repair to manufacturing to commodities brokerage. In addition, spending by employees,

Table II-1. Illinois College and University Current Fund Revenues by Source ($ millions)[a]

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Family Share of Tuition & Fees	$362.0	$148.6	$1,688.6	$60.6	$2,259.7
State ISAC Appropriations[b]	$194.9	$57.1	$227.0	$4.2	$483.2
Other State Appropriations	$1,242.6	$8.8	0.0	0.0	$1,251.5
Local Appropriations	0.0	$450.1	0.0	0.0	$450.1
State & Local Appropriations	$1,437.5	$516.0	$227.0	$4.2	$2,184.8
Federal Grants & Contracts	$421.3	$151.7	$421.6	$6.3	$1,000.9
State Grants & Contracts	$87.4	$377.7	$124.6	0.0	$589.7
Local Grants & Contracts	$4.5	$9.7	$7.2	0.0	$21.3
Private Gifts, Grants & Contracts	$154.6	$5.3	$391.8	$0.5	$552.1
Grants, Contracts & Private Gifts	$667.8	$544.3	$945.1	$6.8	$2,164.0
Federal Appropriations	$17.7	0.0	0.0	0.0	$17.7
Federal Aid to Students[c]	$111.2	$82.2	$91.6	$6.6	$291.6
Endowment Income	$4.5	$0.6	$169.4	0.0	$174.4
Sales and Services of Education Activities[d]	$217.6	$4.1	$278.9	0.0	$500.6
Auxiliary Enterprises[e]	$396.9	$92.7	$399.8	$5.9	$895.2
Other Sources	$143.4	$66.2	$414.7	$1.1	$625.5
Independent Operations	$6.1	$0.4	$639.4	0.0	$646.0
Other	$897.4	$246.2	$1,993.8	$13.6	$3,150.9
Total Current Fund Revenues (non-hospital)	**$3,364.6**	**$1,455.1**	**$4,854.5**	**$85.2**	**$9,759.4**
Revenues from out of state[f]	*$720.0*	*$238.5*	*$1,657.9*	*$17.7*	*$2,634.1*

Source: Integrated Postsecondary Education Data System, *FY1996 Finance Survey*. Data are for institutions listed in Appendix A. Sources for specific lines are indicated in notes below.

a. All amounts are in millions of 1999 dollars.

b. Source: Illinois Comptrollers Office and *Illinois Student Assistance Commission Data Book 1998*. Expenditures by category are allocated to Comptroller's total by the Monetary Award Program shares.

c. Source: Illinois Board of Higher Education. FY 1997 in millions of 1999 dollars.

d. Sales and services of educational activities include revenues derived from the sales of goods and services that are incidental to the conduct of instruction, research or public service, such as film rentals, scientific and literary publications, and university presses.

e. Examples of auxiliary enterprises include residence halls, food services, student health services, and college stores.

f. Revenue from out-of-state sources includes federal appropriations; federal grants & contracts; federal aid to students; endowment income allocated by percent out-of-state alumni; auxiliary enterprises; enrollment, private gifts, grants & contracts by out-of-state enrollment; and tuition & fees by out-of-state enrollment.

Table II-2. Illinois College and University Expenditures ($ millions)[a]

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Instruction	$1,000.1	$533.6	$1,370.0	$17.2	$2,920.8
Academic Support	$263.3	$77.1	$199.1	$3.8	$543.3
Other	$1,633.8	$705.2	$2,107.7	$40.2	$4,486.9
Total Education & General Expenditures & Transfers	$2,897.1	$1,315.9	$3,676.8	$61.2	$7,951.1
Auxiliary Enterprises	$402.5	$98.6	$356.7	$4.7	$862.6
Independent Operations	$6.6	$1.0	$644.7	0.0	$652.3
Capital Expenditures	$430.6	$138.5	$334.5	$1.6	$905.2
Total Current Fund Expenditures (non-hospital)	**$3,736.8**	**$1,554.0**	**$5,012.8**	**$67.5**	**$10,371.2**
Portion of Expenditures (non-hospital) Used for Salaries and Wages	*$1,800.0*	*$727.9*	*$1,680.8*	*$29.1*	*$4,237.8*

Source: Integrated Postsecondary Education Data System, *FY1996 Finance Survey*. Data are for institutions listed in Appendix A. See Appendix E for more detail.

a. FY 1996 in millions of 1999 dollars.

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students, and visitors (both official university visitors and those visiting students) is part of the direct impact. The impact of student and visitor spending will be discussed in Section III, Spending by Students and Visitors.

Just as important as the *direct* impact of expenditures by colleges and universities is the *indirect* effect of that spending. Indirect effects come about because direct higher education expenditures stimulate further economic activity. This is sometimes referred to as the "multiplier" or "ripple" effect. When college employees cash their paychecks, the money begins to flow into all sectors of the economy as the purchases made with those paychecks stimulate additional economic activity. Spending by the institution on goods and services also generates a multiplier effect. For example, when a college contracts with a printing firm for the production of its class schedule, the printing company and its employees are directly affected by the contract. Indirect effects may be felt by the printer's ink and paper suppliers, printing equipment manufacturers, and even the company the printing firm uses to provide health insurance for its employees. This process continues with further rounds of effects as increases in spending work their way through the Illinois economy.

In order to measure the complicated sequence of effects and the additional spending stimulated by higher education expenditures and employment, we used the Chicago Region Econometric Input-Output Model (CREIM) constructed by the Regional Economics Applications Laboratory of the Federal Reserve Bank of Chicago and the University of Illinois.[6] This simulation uses detailed data on transactions between industries in Illinois to trace the impact of changes in higher education spending on other sectors of the Illinois economy. We chose this model over others because it provides the most accurate representation of the Illinois economy available. This model explicitly accounts for the fact that some indirect spending "leaks" out of the Illinois economy into other states and even other countries.

Some of our findings from this model are reported in Table II-3, which shows the total impact of

Table II-3. Direct and Indirect Expenditures Generated in Illinois by Illinois Higher Education Activities ($ millions)[a]

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Direct Expenditures	$3,736.8	$1,554.0	$5,012.8	$67.5	$10,371.2
From Out-of-State Sources	*$799.7*	*$254.7*	*$1,712.0*	*$14.0*	*$2,780.4*
Indirect Expenditures	$6,318.2	$2,627.0	$8,476.0	$113.9	$17,536.0
Total	$10,055.0	$4,181.0	$13,488.8	$181.4	$27,907.1
Generated from Out-of-State Sources	*$2,151.7*	*$685.3*	*$4,606.7*	*$37.7*	*$7,481.3*

a. FY 1996 in millions of 1999 dollars.
Out-of-state expenditure total allocated by share of revenue.

In total almost $28 billion in expenditures—over $6,490 per Illinois household—are generated as the result of higher education activities.

higher education spending in Illinois, including both the direct expenditures of colleges and universities and the indirect effects stimulated by direct activities. In total almost $28 billion in expenditures—over $6,490 per Illinois household—are generated as the result of higher education activities. We also note that the indirect effects of higher education expenditures are more than one and one-half times as large as the direct effect. Of this total expenditure, nearly $7.5 billion comes from outside of Illinois.

Table II-4 shows how these direct and indirect higher education expenditures affect other sectors of the Illinois economy. Of the $27.9 billion in total expenditures, a little more than half, $15.2 billion, was spent in the services sector.

Table II-4. Direct and Indirect Expenditures Generated in Illinois by Illinois Higher Education Activities, by Major Industry ($ millions)[a]

Industry	Expenditures
Services (including Higher Education)	$15,191.8
Nondurable Manufacturing	$4,053.7
Finance, Insurance, Real Estate	$3,317.8
Transportation, Communication, Utilities	$1,734.4
Trade	$1,531.6
Durable Manufacturing	$1,355.3
Construction	$493.6
Government (except Higher Education)	$131.4
Natural Resources	$97.6
Total	$27,907.1

a. FY 1996 in millions of 1999 dollars.

EMPLOYMENT

Illinois colleges and universities employ more than 143,000 men and women in a wide variety of jobs: professors and artists, painters and carpenters, electricians and billing clerks, and hundreds of other job titles. Three institutions of higher education are among the largest employers in the state: University of Illinois, University of Chicago, and Southern Illinois University. In fact, the number of higher education employees in Illinois exceeds the combined number of employees working for Illinois' five largest private companies (Jewel/Osco, Caterpillar, Motorola, Wal-Mart, and Ameritech).[7] See Appendix F for a count of full-time and part-time college and university employees.

Not only did higher education directly provide approximately one job for every 39 Illinois households, we found that more than 350,000 jobs—about one job for every twelve households—were directly or indirectly connected to Illinois' higher education industry.[8] Businesses that receive university contracts hire more employees, resulting in a further increase in household expenditures. Also

Table II-5. Direct and Indirect Employment in Illinois Resulting from Illinois Higher Education Activities, FY 1997 (1000s of full-time equivalents)

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Direct Employment	46.7	22.7	46.4	0.7	116.5
From Out-of-State Sources	*10.0*	*3.7*	*15.8*	*0.1*	*29.7*
Indirect Employment	94.2	45.7	93.5	1.5	234.9
Total	140.9	68.4	139.8	2.2	351.4
Generated from Out-of-State Sources	*30.2*	*11.2*	*47.7*	*0.5*	*89.6*

college and university employees, through their purchases, create additional employment in many sectors. For example, when an Illinois college hires a new professor, she may purchase an existing home. The seller of the home may use that money to hire an architect and construction crew to build a new house to replace the house he sold to the professor. The architect may hire additional staff to complete the project and the construction crew will certainly need to purchase additional materials. The newly-hired professor will likely patronize Illinois businesses to buy furnishings for her house. All of these activities stimulate additional activity and may result in more employment and higher earnings for Illinois residents. Naturally, these expenditures also generate gradually diminishing second, third and further rounds of spending. Table II-5 shows that the indirect effects of higher education spending result in almost 235,000 jobs, an amount twice large as the direct effects. Although these workers are in many different sectors of the economy, 70 percent of them are employed in the service sector (Table II-6). While these indirect effects are largely invisible in the day-to-day operations of colleges and universities they are nevertheless quite real. Of the total number of jobs created, almost 90,000 result from out-of-state students or funding originating outside of Illinois.

Table II-6. Direct and Indirect Employment in Illinois Resulting from Illinois Higher Education Activities, by Major Industry, FY 1997 (1000s of full-time equivalents)

Industry	Employment
Services (including Higher Education)	246.5
Government (except Higher Education)	35.5
Finance, Insurance, Real Estate	22.0
Trade	17.3
Nondurable Manufacturing	11.9
Transportation, Communication, Utilities	7.5
Durable Manufacturing	5.8
Construction	3.1
Natural Resources	1.8
Total	351.4

More than 350,000 jobs—about one job for every twelve households—were directly or indirectly connected to Illinois' higher education industry.

ENDNOTES

1. Professor Geoff Hewings of the University of Illinois Urbana-Champaign provided invaluable assistance in the analysis of the indirect effects of higher education spending discussed in this section and in Section III of this report.

2. For the 1997-98 academic year the total number of higher education employees was 143,585 (89,373 full-time and 54,212 part-time). Full-time equivalent employment was 116,479. Integrated Postsecondary Education Data System, Nation Center for Education Statistics, *Fall Staff Survey 1997*.

3. Integrated Postsecondary Education Data System, National Center for Education Statistics, U.S. Department of Education, *FY1996 Finance Survey*. Because of changes in reporting, data from the FY 1997 and FY 1998 Finance Surveys are not available. Where necessary, we have made adjustments in the data. We have excluded from our study revenues and expenditures relating to university hospitals and clinics.

4. According to the *1998 U.S. Statistical Abstract*, Table 69, there were 4.3 million households in Illinois in 1993. Unfortunately, more recent data on the number of Illinois households are not available. Since the number of households changes slowly we are confident that this figure is also approximately correct for 1996.

5. Other expenditures include about $0.9 billion of scholarship and fellowships that are used outside of the institution. These same expenditures also appear as part of student expenditures in Table III-5, page 31.

Scholarships and Fellowships Expenditures, FY1996 in FY1999$ ($millions)

	Public	Public 2 yr	Private Non-Profit	Private For-Profit	Illinois Total
Scholarships & Fellowships	231.3	107.2	561.0	6.7	906.5

6. A good explanation of the technical details of the CREIM model is given in Philip R. Israilevich, Geoffrey J.D. Hewings, Michael Sonis and Graham R. Schindler, "Forecasting Structural Change with a Regional Econometric Input-Output Model," *Journal of Regional Science*, vol. 37, no. 4, 1997, pp. 565-90.

7. Illinois Department of Commerce and Community Affairs,"Largest Employers in Illinois," *Illinois Economic Bulletin*, vol. 11, no. 2, August 1998.

8. Our estimates of the employment generated by higher education are very conservative. To measure direct employment we used IPEDS data, which do not include individuals employed by university contractors even when all of their duties involve providing goods and services to higher education. Our measure of indirect employment uses a very conservative estimate of changes in employment by contractors employed directly for the university.

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III. SPENDING BY STUDENTS AND VISITORS

In Section II we discussed the multitude of benefits to the Illinois economy resulting from spending by higher education institutions. Like other industries, spending by higher education results in direct and indirect benefits to the Illinois economy. Unlike most other industries, higher education causes large numbers of the "consumers" of its output—students—to relocate. Each fall, students from around the world move to be near college campuses in Illinois. These students bring with them youth, energy and enthusiasm that transform their new environments in many ways. We cannot measure all of the changes brought about by students. Instead we focus on the economic impacts where we have unbiased and reliable data and a solid understanding of the links between student activity and market behavior.

DOMESTIC STUDENT EXPENDITURES

We employed student budget data from the Illinois Student Assistance Commission (ISAC) to estimate expenditures by college and university students.[1] These financial aid budgets yield a very conservative estimate of student spending because they allow for little expenditure beyond the basic necessities.[2] They include estimates of actual costs incurred, including the real cost of living at home for commuter students. By using this approach we can ensure that we do not exaggerate the benefits from student spending. We first discuss domestic students (students whose home is in the United States); foreign or international students will be considered below.

Table III-1 shows the average expenditure in addition to tuition and fees by domestic students attending school in Illinois for the academic year of 1998-1999.

Table III-1. Average Domestic Student Expenditures, 1998

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Average
Books & Supplies	$639	$613	$973	$632	$716
Room & Board	$4,819	$2,525	$5,574	$5,556	$4,091
Personal Expenses	$1,887	$1,495	$1,414	$1,686	$1,601
Transportation	$636	$1,069	$815	$522	$857
Average Spending per Student	$7,980	$5,701	$8,776	$8,396	$7,265

Source: Illinois Student Assistance Commission, *Handbook of Illinois Postsecondary Institutions, 1998-99.*

Table III-2. Students From Outside of Illinois, Fall 1997[a]

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
First-time Freshmen					
Out-of-State Students	1,513	706	6,115	229	8,563
% of All First-Time Freshmen	6%	2%	32%	7%	10%
Undergraduate Transfers					
Out-of-State Students	1,991	NA	2,115	21	4,127
% of All Undergraduate Transfers	12%	NA	18%	7%	14%
Beginning Professional Students					
Out-of-State Students	157	0	1,499	NA	1,656
% of All Beginning Professional Students	15%	0	43%	NA	37%
Beginning Graduate Students					
Out-of-State Students	3,318	0	4,746	NA	8,064
% of All Beginning Graduate Students	37%	0	37%	NA	36%

Source: Illinois Board of Higher Education, Fall 1997 Enrollment Survey and unpublished IBHE data. Data are for institutions listed in Appendix A.

a. Includes international students.

NA: Data not available.

Illinois higher education not only keeps qualified young people in the state, it also attracts talented students from other states. Table III-2 shows the out-of-state share of all students newly entering Illinois institutions of higher education as well as the number of these students.

The percentage varies by level of education and by type of institution. At all levels a large majority of students at Illinois institutions of higher education are from Illinois. However, graduate and professional programs tend to be more specialized than undergraduate programs, and so draw from a much broader geographic area. More than one third of new graduate students come from other states. Very few of these students would live in our state but for its higher education system.

In 1997 more than 22,000 students moved to Illinois to study in institutions of higher education. More than 12,000 of these students were undergraduates while a little less than 10,000 were graduate or professional students. The total number of students from outside Illinois is much higher than 22,000 because many of these students spend the remainder of their academic careers in Illinois. Many students remain in Illinois even after they finish their academic work and use the skills they developed in school to enrich the state for many years in the future.

The expenditures by these students will be presented after we consider international students.

INTERNATIONAL STUDENT EXPENDITURES

International students are also from outside of Illinois and are included in Table II-2 above, but their economic behavior is markedly different from that of domestic students. The number of international students studying in

Table III-3. Various Estimates of International Students' Annual Expenditures

	IIE Illinois Average[a]	UW-Madison Minimum Spender[b]	University of Illinois at Chicago Average[c]	U. of Wisconsin Average[d]	NAFSA[e]	UW-Madison Average[f]
Spending per Student	$6,570	$9,392	$12,450	$13,264	$15,862	$24,640

a. Institute of International Education, *Open Doors: Report on International Educational Exchange 96-97*. Todd M. Davis, ed. New York: Institute of International Education, 1997.

b.,f. David L. Funk, "International Student Spending at the University of Wisconsin-Madison," in *Open Doors 96/97*.

c. UIC Office of International Services, 1998-99 international student budget.

d. William A. Strang, et al., "Economic Impact of the University of Wisconsin System," University of Wisconsin-Madison School of Business, April 1997."

e. NAFSA: Association of International Educators, "The Economic Benefits of International Education to the United States of America: A Statistical Analysis: State of Illinois," 1998.

the U.S. is significant; the Institute of International Education (IIE) reported 481,000 in the 1997-98 school year[3], primarily in California, New York, Texas, Massachusetts, Florida, and Illinois. Illinois' international student population in 1997 was more than 15,000.[4]

The average international student spends more on non-tuition expenses than a domestic student. Exactly how much more is difficult to quantify; the few studies that have been done on this topic have widely varying results. Table III-3 shows various estimates of per-capita international student expenditures.

Researchers at the University of Wisconsin-Madison found, for instance, that the average international student in the U-W system spends $13,264 per year. Another study at U-W found that a typical international student spends $24,640 per year, while a "minimum spender" international student gets by on $9,392 a year. On the other hand, the IIE uses data from the College Board's annual survey, which estimates Illinois international student spending on "maintenance costs" (room, board, books, travel, and miscellaneous) at only $6,570. We chose to take the middle road and use the University of Illinois at Chicago's international student budget figure of $12,450.

There are several reasons why an international student will spend more than a domestic student. In twelve of the twenty-two categories of expenditure tracked in the study by David L. Funk, international student spending was actually equal to or less than domestic student spending.[5] The categories of telephone bills, vehicle purchase, furniture and appliances, transportation, books/supplies, travel, and visitor spending accounted for the higher international student spending. For example, travel costs for an international student will be high because of the airfare expense to get to and from school each year. The country of origin is significant here; nine of the top ten home countries of international students are in Asia and the South Pacific.[6] Not only is airfare costly, but baggage limitations require the students to purchase most of the household items they need once

Table III-4. International Student Enrollment and Percent of Total Enrollment in Illinois Colleges and Universities, Fall 1997 (full-time equivalent enrollment)

		Public Universities	Public Community Colleges[a]	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Undergraduate Students	International students	2,141	381	2,691	161	5,374
	% of total undergraduates	2%	1%	3%	2%	1%
Graduate Students	International students	4,995	0	4,818	0	9,813
	% of total graduates	12%	0%	10%	0%	11%
Total	International students	7,136	381	7,509	161	15,187
	% of total enrollment	4%	1%	5%	2%	3%

Source: Illinois Board of Higher Education, *Data Book on Illinois Higher Education*, 1998. Data are for institutions listed in Appendix A.

a. FTE for community colleges includes only those students in undergraduate programs.

they get to the U.S. In addition, international students are likely to purchase computers and other electronics for themselves and friends and family. They also may engage in extra travel and host long visits by friends and family from home.

The education of international students is an export industry, as the U.S. sells the service of education to residents of other nations. Education services represent the United States' fifth largest service industry export, generating $8.3 billion in tuition and student spending in 1997, and 156,000 jobs.[7]

Within Illinois, the schools with the most international students are University of Illinois at Urbana-Champaign (3,238), Northwestern University (1,624), University of Illinois at Chicago (1,509), Southern Illinois University-Carbondale (1,392), and University of Chicago (1,374).[8] Together these five schools have almost half of the international students in Illinois. Although international students comprise only 1 percent of the statewide undergraduate student population, they make up 11 percent of the graduate students, as shown in Table III-4.

TOTAL STUDENT EXPENDITURES

Estimates of total direct student spending in Illinois were developed using data on the number of in-state and out-of-state domestic and international students and information about the average spending of these students at each type of higher education institution. The results are displayed in Table III-5.[9] In addition, the table provides direct employment as found in the input-output model. In total, Illinois students spent nearly $4 billion in Illinois during FY 1999 and in the process created almost 100,000 jobs. Of this total, out-of-state domestic and international students spent about three-quarters of a billion dollars. International students in Illinois alone contributed $189 million, about 5 percent of the total student spending. Much of this international student spending is concentrated in a few communities,

Table III-5. Direct Student Expenditures and Employment, FY 1999

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Expenditures ($ millions)					
In-State Domestic Students	$1,147.2	$1,182.3	$794.9	$59.9	$3,184.2
Out-of-State Domestic Students	$156.3	$15.9	$384.5	$3.7	$560.5
Foreign Students	$88.8	$4.7	$93.5	$2.0	$189.1
Total Expenditures	$1,392.3	$1,202.9	$1,272.9	$65.6	$3,933.8
Employment Created (1000s of full-time equivalents)					
In-State Domestic Students	28.7	29.6	19.9	1.5	79.7
Out-of-State Domestic Students	3.9	0.4	9.6	0.1	14.0
Foreign Students	2.2	0.1	2.3	0.1	4.7
Total Employment	34.9	30.1	31.9	1.6	98.5

Data are for institutions listed in Appendix A.

including Evanston, Urbana-Champaign, Hyde Park (in Chicago), and Carbondale.

The reader may suspect that the apparent economic benefits of international students in the U.S. are offset by subsidies and grants from the U.S. government and schools. However, according to the IIE, this is not true. In 1995-96, 76.7 percent of all international students received their primary funding from sources in their home country, especially their families. Only 17 percent received their primary funding from the college or university.[10] In general, U.S. schools require incoming international students to furnish proof that they will be able to meet their tuition and other financial obligations before they are accepted.

The response to one question in the survey we describe below has special significance for understanding both student and visitor expenditures. Of the students surveyed, 82 percent said they would have gone outside of Illinois to attend college if there were no higher education in Illinois.

VISITOR EXPENDITURES[11]

A major economic impact of higher education on the state of Illinois is visitor expenditures. As parents, family, and friends visit college students, expenditures are made for food, lodging, clothing, entertainment, and other goods and services. In addition to these visitor expenditures, economic activity is also created when students make pre-college visits to Illinois colleges and universities. About 80 percent of the visitor expenditures and all of the pre-college visit expenditures would not have been made in Illinois without the presence of colleges and universities.

To estimate the economic impact of visitor expenditures a mail survey of students enrolled at Illinois colleges and universities during the spring of 1999 was completed. In developing the sample, we assumed visitor expenditures could vary due to factors including the geographic location of the school, the type of school (public, private, small, large), the mix of undergraduate

and graduate students, and the mix of residential and commuting students.

Using these factors as a guide, a sample of schools from which to survey students was selected.

These seven schools are:

- Illinois Wesleyan University - Bloomington
- North Central College - Naperville
- Northern Illinois University - DeKalb
- Northwestern University - Evanston
- University of Illinois - Urbana/ Champaign
- University of Illinois - Springfield
- Western Illinois University

Because we had limited resources, students at public community colleges were not surveyed. We know that some community college students do relocate to attend school, and this minority of students generates expenditures that otherwise would not occur by bringing additional visitors to Illinois. However, we lacked good data on spending generated by visits to community colleges. Therefore, in line with the generally conservative approach of this study, we chose not to impute a figure for community college pre-college visits and visitor expenditures.

To complete the survey, the administration of each of the seven schools in our sample was contacted, apprised of the project and asked to participate. The schools provided an electronic database of their spring 1999 enrolled students and a sample was drawn from these files. The school-specific survey results were then weighted by enrollment at schools with similar characteristics to find statewide averages and totals. In total, 7,177 surveys were mailed and 2,310 valid surveys were returned for an overall response rate of 32.2 percent. The highest response rate was from Northern Illinois University (53.4 percent) and the lowest was from Northwestern University (24.6 percent). The overall high response rate may have been the result of the incentive provided for returning a survey. Each student who returned a survey was eligible to participate in a drawing for a $1,000 cashier's check.

The survey, which can be found in Appendix G, was designed to obtain information on expenditures that were made during visits by parents, family, and friends. The questionnaire also asked about expenditures during pre-college visits. Visitor expenditures were grouped into six broad categories:

- Restaurants and bars
- Groceries
- Clothing
- Other consumer goods and services
- Cultural or athletic events
- Hotels and motels

Realizing that expenditures may vary based on who is visiting and the type of visit, the questionnaire requested information about three types of visits: 1) visits by parents and other adult family members, 2) visits by friends, and 3) pre-college campus visits. For pre-college visits, information was collected only for expenditures on restaurants, cultural and athletic events, and hotels and motels. In all cases the respondents were asked

Table III-6. Average Expenditures per Visit, FY 1999[a]

	Type of Visit		
	Parents & Family	Friends	Pre-College Visits
Restaurants and Bars	$69	$45	$33
Groceries	$24	$5	-
Clothing	$25	$13	-
Other Consumer Goods and Services	$32	$20	-
Cultural or Athletic Events	$14	$13	$5
Hotels and Motels	$29	$7	$20
Average Spending per Visit	$193	$103	$59
Visits per Student	4.51	4.50	2.02
Average Spending per Student	$870	$464	$119

a. In 1999 dollars

Table III-7. Total Expenditures by Visitors[a], FY 1999[b]

	Public Universities	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Expenditures ($ millions)				
From Illinois Visitors	$211.8	$149.8	$7.1	$368.5
From Out-of-State	$29.8	$123.4	$1.2	$154.5
Total	$241.6	$273.2	$8.3	$522.9
Employment Created (1000s of full-time equivalents)				
From Illinois Visitors	6.0	4.2	0.2	10.4
From Out-of-State Visitors	0.8	3.5	0.1	4.4
Total	6.8	7.7	0.2	14.7

a. Visitors to students and pre-college visitors
b. In 1999 dollars

about the number of visits made. First we determined the average expenditure per visit and the number of visits per student each year. These are shown in Table III-6. For the average student, parents and relatives spend $870 a year on visits while friends spend an average of $464. Pre-college visits average $119 per student.

Combining the average expenditures with the total number of students and new freshman, we found the total expenditures by type of university. These results make use of the different propensities to spend at the different universities. Table III-7 provides the results. In total, visitors to students spend $523 million per year in Illinois, creating almost 15,000 jobs.

Finally, the questionnaire asked how many of each type of visitor came from outside the state. Using this information we determined the amount of total visitor expenditures which came from out-of-state sources. Table III-7 contains these values. Visitors from out of state to students at Illinois colleges and universities spend a total of $155 million per year. This table is shown in more detail in Appendix H.

Overall, the presence of higher education in Illinois results in significant visitor expenditures and assists in fueling the economic engine that drives the state's economy.

Table III-8. Indirect Expenditures and Employment Generated by Student and Visitor Spending, FY 1999 ($ millions)

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Indirect Expenditures ($ millions)					
From in-state sources	$3,238.8	$2,754.3	$2,252.1	$158.8	$8,404.1
From out-of-state sources	$651.0	$48.0	$1,443.8	$16.5	$2,159.2
Total	$3,889.8	$2,802.3	$3,695.9	$175.3	$10,563.3
Indirect Employment (1000s of full-time equivalents)					
From in-state sources	37.1	31.1	25.8	1.8	95.8
From out-of-state sources	7.4	0.5	16.6	0.2	24.7
Total	44.5	31.6	42.4	2.0	120.5

INDIRECT EFFECTS OF STUDENT AND VISITOR EXPENDITURES

The expenditures of students and visitors generate direct and indirect benefits to the local community and to the state of Illinois. Communities benefit directly because student and visitor spending creates economic activity that stimulates employment. The direct effects of student and visitor expenditures are shown in Tables III-5 and III-7, above. In total students and their visitors directly spent almost $4.5 billion in Illinois in FY 1999. About 20 percent of this total, $900 million, was spent by out-of-state students and visitors. Student and visitor expenditures directly supported an estimated 113,000 Illinois jobs throughout the Illinois economy. The additional people employed as the result of student and visitor expenditures in turn generate additional expenditures. These indirect benefits are even greater than the direct benefits. As in Section II, we measured multiplier effects using the Chicago Region Econometric Input-Output Model (CREIM) constructed by the Regional Economics Applications Laboratory of the Federal Reserve Bank of Chicago and the University of Illinois.

In Table III-8, we apply the model and find the indirect effects of those expenditures. In total, over $10.5 billion dollars in indirect expenditures and more than 120,000 jobs are generated by the indirect effects of student and visitor spending. Approximately 20 percent of both spending and employment are the result of out-of-state (including international) student and visitor spending. A breakdown of the spending and employment by industry that are

The expenditures by students and visitors at Illinois colleges and universities total over $15 billion with more than $3 billion coming from out-of-state students or visitors. In turn this creates a total of more than 230,000 jobs with 48,000 related to out-of-state sources.

Table III-9. Total Direct and Indirect Spending and Employment Generated by Students and Visitors

Generated from:	Spending ($ millions)	Employment (1000s of full-time equivalents)
Illinois Sources	$11,956	185.9
Out-of-State Sources	$3,064	47.9
Total	$15,020	233.7

generated as a result of student and visitor activities is shown in Appendix I.

SUMMARY

Table III-9 summarizes the results of this section. The expenditures by students and visitors at Illinois colleges and universities amount to a total of over $15 billion with more than $3 billion coming from out-of-state students or visitors. In turn this creates a total of more than 230,000 jobs with 48,000 related to out-of-state sources.

ENDNOTES

1. Illinois Student Assistance Commission, *Handbook of Illinois Postsecondary Institutions, 1998-99.*
2. Our estimate of expenditures per student averaging $7,265 is much more conservative than the more than $9,000 per student used by William A. Strang et al., *Economic Impact of the University of Wisconsin System,* University of Wisconsin-Madison, April 1997, p. 9.
3. Institute of International Education, *Open Doors: Report on International Educational Exchange 97-98.* Todd M. Davis, ed. New York: Institute of International Education, 1998.
4. The IIE's Illinois total, as reported in *Open Doors 97/98,* was 20,703. For consistency with other sections of this study, we use the IPEDS count of 19,438 reported in the *IBHE 1998 Data Book,* converted to 15,187 full-time equivalents. IPEDS obtains its figures from the institutional research office of each school, whereas the IIE surveys international student offices.
5. David L. Funk, "International Student Spending at the University of Wisconsin-Madison," in Institute of International Education, *Open Doors 96/97.*
6. NAFSA: Association of International Educators, "The Economic Benefits of International Education to the United States of America: A Statistical Analysis. State of Illinois," 1998.
7. NAFSA, 1998.
8. Illinois Board of Higher Education, *Data Book of Higher Education,* 1998. Tables II-9 and II-10.
9. Scholarship and fellowship expenditures shown in Table II-2 and Appendix E are included in the total of III-5.
10. Institute of International Education, *Open Doors 95/96.*
11. The visitor survey was conducted by the Center for Governmental Studies, Northern Illinois University, Spring 1999, under the direction of John Lewis and Michael Peddle. They also assisted in writing this section.

College Towns

It's a fall Saturday in Evanston, Illinois. Purple flags are flying everywhere, and the streets are jammed as eager people make their way to Ryan Field to see the Northwestern University Wildcats play football. The people are not, however, all students; a large percentage are community residents with little or no direct affiliation with Northwestern. The Wildcats are their local team, and the entire community is caught up in the excitement.

A city where the college or university and community share such a close relationship is considered a "college town." Not all colleges have such an obvious influence on the community; the relationship depends on many factors, including the relative size of the school and the town. College towns have a distinctive feel, with many restaurants and shops within walking distance of the campus. These college towns will tend to have a concentration of types of businesses frequented by students and staff. In addition, the college influences community residents, many of whom attend or work for the school, to become involved in off-campus creative or volunteer activities.

We briefly compared several small and medium-sized cities which are known as "college towns" to several which we know not to be college towns. While some of the non-college towns do contain institutions of higher education, the school does not play a significant role in shaping the community character.

For our college towns, we selected Bloomington-Normal (home of Illinois State and three other schools), Macomb (Western Illinois), and Carbondale (Southern Illinois). Our non-college towns are Waukegan, Woodstock, Alton, and LaSalle-Peru. Although this is just a sample, we do see that college towns consistently have more of certain types of businesses than non-college towns.

Number of Businesses per 50,000 Residents, 1999

	College towns	Non-college towns
Apartment Buildings	37.7	20.1
Pizza Places	19.3	16.3
Computer Equipment	11.5	2.8
Computer Repairs	9.5	2.4
Book Stores	9.2	5.9
Copy Shops	8.8	4.5
Music/CDs	7.1	5.2
Computer Services	6.4	1.7
Disc Jockeys	5.4	3.1
Coffee Houses/Shops	5.1	3.1
Radio Stations	4.8	2.4
Stage Theatres	4.1	1.4
Movie Theatres	3.1	1.0

Sources: Ameritech Yellowpages.net, August 1999; U.S. Census Bureau, 1998 estimates of population by city

IV. STATE AND LOCAL TAX REVENUE

As we showed in Section I, students in Illinois benefit directly from very large increases in their income as a result of attending school in Illinois. This income leads to similar gains for state and local government. The students who live in Illinois will pay income tax as well as sales tax on items they purchase. Moreover, they will pay property taxes within the state as well as taxes on gasoline, telephone, electricity and so forth. The companies they work for will be more profitable as a result of their efforts, and they, too, will pay additional taxes. Just as the income continues over the working life of the students, the tax revenue will also occur over many years in the future. Therefore, as we did in Section I, we found the present value of the future tax revenue that will be paid by these students.

We include both state and local tax revenues and exclude from consideration federal tax revenue. Several taxes are considered:[1]

SALES TAXES

This tax covers only a subset of all sales in the state so the tax rate does not tell us what the average consumer spends on sales taxes. Because of this, we examined the total sales tax collections in the state and found that these are 2.47 percent of state personal income.[2] In addition, we analyzed data for the counties in Illinois to find the degree to which additional income adds to spending on these taxes.[3] This work found a sales tax elasticity of 1.15. Each additional $100 of income therefore increases tax revenue by the average taxation (2.47 percent) times the elasticity (1.15), or $2.83. In this analysis, we include the local government share of the state sales tax but exclude locally determined sales taxes.

PERSONAL INCOME TAXES

The students' additional income will directly increase the income reported to the state on tax returns. Since the state allows limited deductions, the added income resulting from higher education will be taxed at the 3 percent marginal rate. This additional income will also appear on federal income tax returns, resulting in a substantial benefit for the U.S. government which we will not calculate here.

CORPORATE INCOME TAXES

While we believe that corporate taxes will rise more than proportionally as incomes rise, we have no information on which to base an estimate of this effect. Therefore, we limit our corporate tax increment to the average ratio

IV-1. Present Value of Future Tax Revenue

		Future Tax Revenue ($ millions)				
	Marginal Tax Rate	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Sales Tax	2.83%	$432.7	$270.5	$968.0	$29.6	$1,700.9
Personal Income Tax	3.00%	$457.9	$294.8	$989.5	$33.3	$1,775.6
Corporate Income Tax	0.52%	$79.2	$51.0	$67.1	$5.4	$202.9
Motor Fuel Tax	0.38%	$58.0	$37.3	$49.3	$4.0	$148.7
Other State Taxes	2.25%	$343.2	$220.9	$291.9	$23.5	$879.5
Property Tax	6.09%	$928.8	$598.0	$790.0	$63.6	$2,380.4
Total	15.07%	$2,299.8	$1,480.5	$3,956.1	$157.4	$5,894.0
% of Alumni Who Remain in Illinois		*68.4%*	*90.0%*	*64.2%*	*92.5%*	

of corporate taxes to state personal income, 0.52 percent.

MOTOR FUEL TAXES

As with corporate income taxes, our information is limited to the average motor fuel tax collections in proportion to state personal income, 0.38 percent.

The present value of the tax return to state and local governments totals $5,894 million.

OTHER STATE TAXES

The largest element within this category of "other" taxes is the public utility tax, but it also includes cigarette, inheritance, corporate franchise, liquor, and riverboat taxes. We limit this analysis to taxes that would be expected to rise with income. This category totals 2.25 percent of personal income.

PROPERTY TAXES

We found the average property tax rate in relation to income, 4.3 percent, and adjusted this by the income elasticity of property tax revenue, 1.41 percent. The outcome is that, on average, each additional $100 of income leads to an additional $6.09 in property taxes.

Using this analysis, the total incremental tax on Illinois residents from all sources amounts to 15.07 percent of the increase in graduates' income. However, because only the students that stay in Illinois pay these taxes, we reduced the revenue by the fraction of students that live outside of Illinois after graduation.[9] For public universities the fraction of in-state alumni is 68 percent, while for private non-profit schools it is 64 percent. Because data are not available for the community colleges, we assumed that 90 percent of the former students remain in the state.

The state appropriation for colleges and universities in fiscal year 1999 was $2,454 million.[10] The present value of the tax return to state and local governments totals $5,894 million. This is in addition to all the personal returns to the individual and the returns to society.

Table IV-1 provides the present value of tax revenue for each type of school and for the major types of taxes.

ENDNOTES

1. All tax revenue data are from the State of Illinois Office of the Comptroller.

2. Personal income data are from the U.S. Bureau of Economic Analysis.

3. I. Fred Giertz and Sherrilyn Billger assisted in the concepts and the analysis.

4. Results of a survey conducted by the Institute of Government and Public Affairs, University of Illinois, Summer 1999.

5. Center for Higher Education, Illinois State University, *Grapevine*, and Illinois Board of Higher Education. Total FY1999 state tax appropriations for Illinois higher education and an estimate of General Revenue Fund transfers for debt service related to higher education capital projects.

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V. NONMONETARY RETURNS TO THE STUDENT AND SOCIETY

Researchers who undertake a study of the returns to higher education usually emphasize the monetary returns, which are enormous and measurable. Expenditures on education are clearly an investment: parents, students, governments, and employers spend money on education now with the expectation of financial returns in the future. However, education has substantial impacts outside the financial market. Individuals and society benefit from education in ways that are less tangible and more difficult to measure, but are no less substantial. As stated by Haveman and Wolfe, "A full accounting must consider all of schooling's effects, positive and negative, and not simply those recorded in a single market."[1]

Therefore, our study would be remiss by not mentioning the non-financial returns which accrue to the individual and to society. Personal development, preservation of the cultural heritage, advancement of knowledge and art and literature, national prestige and power, and the satisfaction of living in an educated society are all benefits of education. "These nonmonetary benefits surely are far greater than the monetary benefits—so much greater, in fact, that individual and social decisions about the future of higher education should be made primarily on the basis of nonmonetary considerations and only secondarily on the basis of monetary factors."[2] This is perhaps too idealistic a sentiment, but clearly the expected non-monetary benefits are worth considering when making decisions regarding higher education.

College education clearly has great benefits for individuals, families, and society, apart from the effects of increased income.

CAVEATS

Several caveats should be noted in our analysis. First, our study should control for income and not include elements that could be caused by either income or education. Our main results are based on studies that controlled as appropriate for income, age, and race.[3]

Second, it is not appropriate to assume that all of the nonmonetary benefits discussed below are

cumulative in their effects. Each effect was verified independently of the others, and many or most may actually represent different ways of looking at the same educational benefit. In addition, the research on each nonmonetary benefit generally focused on a specific population, such as adults aged 25 to 64, or young black females in New Jersey. We have included mention of every nonmonetary benefit we found, but the level at which the studies were done may render the results more applicable to some regions and populations than others.

Third, college education clearly has great benefits for individuals, families, and society, apart from the effects of increased income. However, the direction of causality is not always clear. In Section I, we used results from the Ashenfelter-Rouse study of twins that indicated the amount of change caused by the college education. While these results do not apply directly to nonmonetary gains, as an estimate we have used the same 88 percent adjustment factor. Therefore, we may have over- or underestimated the true causation.

SPECIFIC BENEFITS

In Section I: Monetary Benefits to Students, we found the specific dollar increment of income that is received by Illinois students from one year's activity by Illinois higher education. In that section we found an annual change in income for each student and then calculated the present value of all future income.

Table V-1. The Nonmonetary Benefits of a College Education

People with some college education:

Health
- have better health, as do their families
- have lower mortality rates, and have children with lower mortality rates
- are more likely to seek prenatal care when they become pregnant
- are less likely to smoke cigarettes when they become mothers

Child rearing and domestic management
- have daughters who are less likely to give birth out of wedlock
- are better at family planning and using contraceptives
- become more actively involved in their children's education
- are more likely to provide a quality education for their children
- read more to their children on a daily basis
- have children with higher education levels and better cognitive development
- are more skillful in making household purchasing decisions, thereby saving money and improving health and safety
- have a higher savings rate
- rely less on public financial aid

Employment
- have reduced job search costs and are more regionally mobile with respect to work location
- tend to have better working conditions, including health and safety of the workplace, flexible work schedules, work autonomy, and grievance procedures
- tend to find their work more enjoyable, interesting, and challenging

Participation in society
- donate more time and money to charitable causes
- are more likely to vote
- are less likely to participate in criminal activity
- are less likely to receive welfare or Social Security disability benefits

In previous sections we considered the effects of one year's activity by Illinois higher education. However, we cannot calculate the present value of nonmonetary outcomes, so instead we take a historical approach and determine the benefits that Illinois enjoys in the current year as a result of past Illinois higher education activities.[4] The impact of this history creates in this year in Illinois:

- 15,000 fewer premature adult deaths
- 581,000 more members of the labor force
- 614,000 more employed people
- 890,000 more people volunteering their time
- 4,422,000 more volunteered hours each week (equivalent to 111,000 full-time jobs worth of volunteer work)
- 523,000 more people giving to charity
- $2,303,000 more in charitable contributions
- 684,000 more registered voters
- 780,000 more people voting in major elections

GENERAL BENEFITS

The most obvious nonmonetary benefit of higher education is that the student becomes educated. In school, people learn information and skills that will serve them in their careers and in their social lives. Liberal arts and humanities students seek a broad-based education covering literature, arts, and philosophy, which will make them better conversationalists, thinkers, and leaders. Those who study sciences such as engineering or chemistry will become better engineers and chemists, with the hope that their work and research will improve the way of life for people.

There also exist a number of nonmonetary benefits that cannot be quantified as directly as those described above. Table V-1 delineates a number of these.[5]

ENDNOTES

1. Robert H. Haveman and Barbara L. Wolfe, "Schooling and Economic Well-Being: The Role of Non-Market Effects," *The Journal of Human Resources*, vol. 19, no. 3, Summer 1984, p. 379.

2. Howard R. Bowen, *Investment in Learning: The Individual and Social Value of American Higher Education*, Baltimore: The Johns Hopkins University Press, 1997.

3. Haveman and Wolfe (1984); Barbara L. Wolfe and Samuel Zuvekas, "Nonmarket Outcomes of Schooling," *International Journal of Education Research*, vol. 27, no. 6, 1997; and Walter W. McMahon and Wendy V. Cunningham, "Education for Great Cities: Measuring the Contribution of Investment in Higher Education at the University of Illinois at Chicago," University of Illinois Office of the Vice President for Academic Affairs, August 1998.

4. Appendix J provides technical notes on the calculations and sources. We consider adults under age 65 who attended a college or university in Illinois, i.e. students who graduated in the past forty years.

5. Items from this "laundry list" of nonmonetary benefits are drawn from studies by Wolfe and Zuvekas (1997); Haveman and Wolfe (1984); Bowen (1977); Greg J. Duncan, "Earnings Functions and Nonpecuniary Benefits," *The Journal of Human Resources*, vol. 11, no. 4, Fall 1976; and Michael Grossman and Robert Kaestner, "Effects of Education on Health," Rebecca A. Maynard and Daniel J. McGrath, "Family Structure, Fertility, and Child Welfare," and Ann Dryden Witte, "Crime," all in *The Social Benefits of Education*, Jere R. Behrman and Nevzer Stacey, eds., Ann Arbor: The University of Michigan Press, 1997. This list does not attempt to quantify the benefits, and it should be noted that all of the caveats from the earlier section apply. For a thorough accounting of the formal studies on nonmonetary benefits which have been done to date, see Table 3.1 in Wolfe and Zuvekas (1997).

Students Volunteer in Local Communities, Making a Difference with Habitat for Humanity

Although most college students juggle a full schedule of classes, work, and social activities, many also find the time to participate in volunteer or service projects. Habitat for Humanity, an international ecumenical non-profit organization dedicated to building quality low-income housing for the less fortunate, has attracted student volunteers from almost every Illinois college and university.

Through campus chapters and in partnership with local affiliates, student volunteers help build Habitat houses, raise funds for the building projects, mentor homeowners' children, and spread the word about the need for affordable housing. Many Illinois students work with Habitat groups all year long, and hundreds of others volunteer during their vacation time through "Alternative Spring Break" programs, often sponsored by local churches and other organizations.

Illinois Wesleyan University and Illinois State University Habitat volunteers are making a significant impact on the physical well-being of their community. Volunteers in these two organizations work together to build one house per year in Bloomington, Illinois Wesleyan student and volunteer Rebecca Murphy says those volunteers are committed to "solving homelessness one house at a time. It's a very goal-oriented activity...they want to make a difference and actually accomplish something."

Illinois State's Industrial Technology Department provides overseers for the project. It also conducts presentations on building education to teach volunteers the basic skills needed. Although professionals must complete some work on the homes, students work on weekends in all aspects of the construction.

The fund-raising efforts conducted by the two groups are crucial. Each year they raise half of the $36,000 necessary to build one house. Fund-raising efforts include raffles, auctions, and even a singing telegram service.

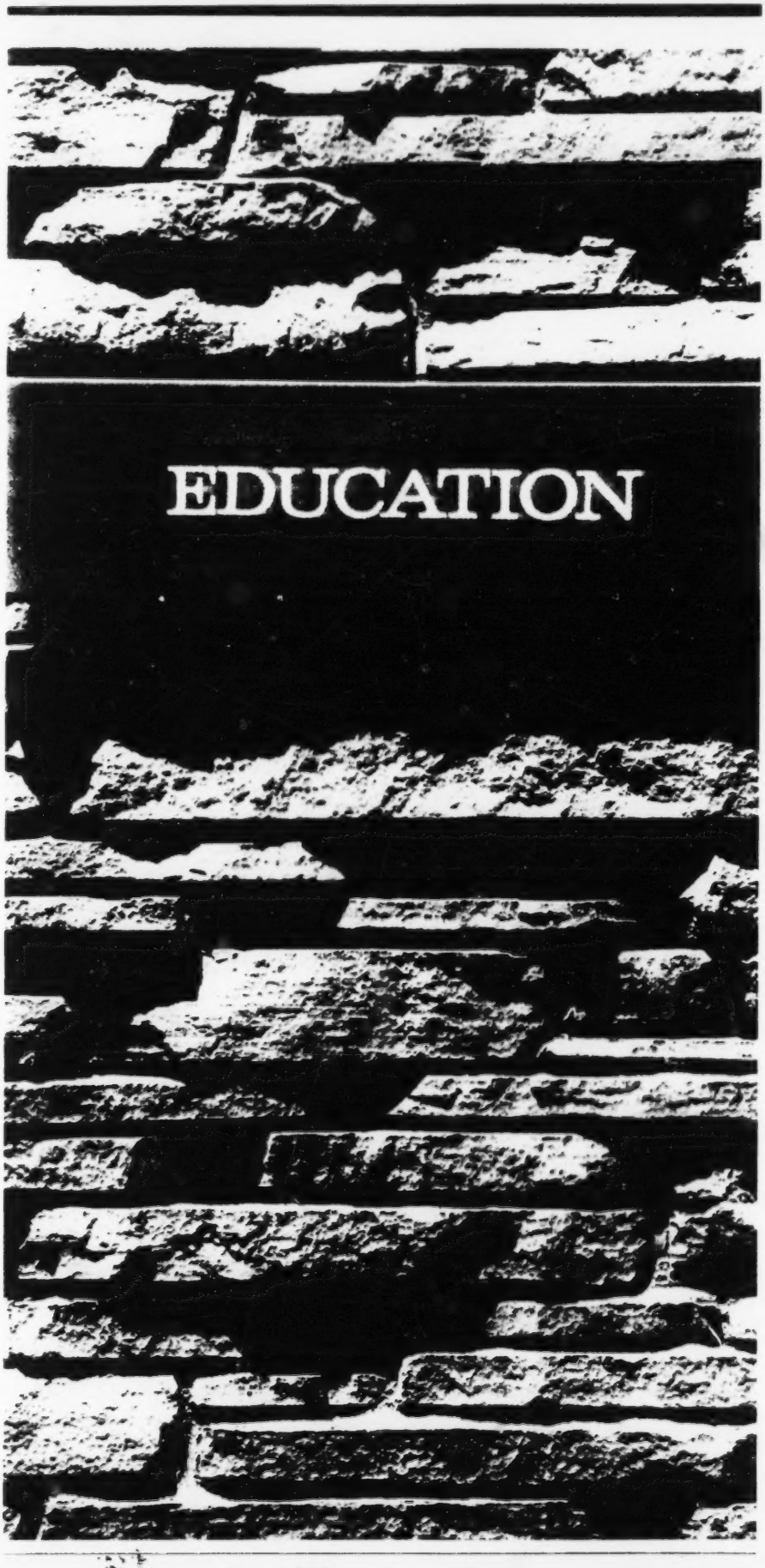
Over 700 University of Illinois at Urbana-Champaign students also volunteer for Habitat in a variety of ways: interviewing potential homeowners, working with children and families, public speaking, writing for a newsletter, organizing fundraisers, and working on the construction sites.

Working together with the Champaign County Habitat for Humanity chapter, University of Illinois students joined faculty, staff, and community volunteers to put the "home" into Homecoming in October 1999. More than 200 volunteers constructed the frame of a one-story four-bedroom home on the university campus during Homecoming week. The frame was later moved to its permanent location in Urbana. Volunteers will continue to work on the home throughout the year.

According to Stan Worst, construction coordinator for the student chapter and a senior in civil engineering, the estimated construction cost (building materials and hiring subcontractors for some of the work) is $45,000. Student volunteers raise money for building projects through a variety of fund-raising efforts during the school year.

Illinois College & University Habitat for Humanity Chapters:

Augustana College
Bradley University
DePaul University
Eastern Illinois University
Eureka College
Greenville College
Illinois State University
Illinois Wesleyan University
Knox College
Lake Forest College
MacMurray College
North Park College and Theological Seminary
Northern Illinois University
Northwestern University - Chicago Campus
Northwestern University - Evanston
Principia College
South Suburban College of Cook County
University of Chicago
University of Illinois at Chicago
University of Illinois at Urbana-Champaign


EDUCATION

VI. PRODUCTIVITY BENEFITS OF HIGHER EDUCATION

Higher education increases the skill level of people, enabling them to qualify for higher-level jobs and thereby increasing their level of pay. As the number of people with higher skill levels increases, it allows firms to shift to production methods that utilize those skills. However, there is a further benefit to society that can arise in two important ways.

INNOVATIONS

First, new innovations increase productivity. These innovations can be far-reaching, such as the invention of the light bulb, the telephone, or the personal computer. There are also many simple innovations such as a better way of organizing a production process or of distributing a product. Some of these changes lead to patents owned by universities and others lead to new businesses that employ state-of-the-art ideas. The computer and the Internet illustrate the very large gains that accrue to society through the development of new equipment and hardware, through new software such as Windows or Excel, and through the use of the computer to improve production and distribution. These innovations arise in part because of the research at Illinois universities and because of the ideas our students bring to the workplace.

LABOR FORCE PRODUCTIVITY

Benefits to the worker and the firm.

The labor force becomes more productive because it is more highly educated and exposed to new techniques and innovations. One outcome is the higher earnings for workers. In addition, the profits of firms that employ these workers may increase as the new, well-educated workers improve both products and productivity at the firm.

Benefits to society.

Even more important, all firms have access to these ideas, and all must make use of them if they are to stay competitive and profitable. In a competitive economy, the better methods that come from a better-educated work force are used not just by one firm but by all that remain profitable. Because of competition, the result is lower prices and better products which benefit everyone in society, including those who did not attend college.

SOCIETAL GAINS

It is difficult to precisely quantify these gains, but economic models of growth (Solow Models)[1] give us a good, reliable method for finding the correct order of magnitude. In the following analysis we make a very conservative estimate of these societal gains. In this analysis, the total growth of output is decomposed into portions due to increases in the labor force, in the amount of capital available, and in the level of education of the workforce, and another portion due to productivity growth. These results are separated further to determine the portion due to Illinois higher education.

In this analysis, we must make some important assumptions. First, an increase in the median years of school is proportional to the number of years of school. Since this growth is attributed to the labor force and wages to labor, it is part of the financial return discussed above and not part of the direct productivity gain in this section. In addition, we assume that only 25 percent of the total productivity gain is assigned to higher education and 75 percent comes from other sources. We believe this is a very conservative assumption. Finally, we assume that the net interest rate (interest rate less growth rate) is 4 percent. This very high estimate of the rate assures that our estimates of benefits will be extremely conservative because a higher rate leads to a lower estimate of total benefits.

Using such a model we find the following for the past 50 years:

Growth in U.S. National Product:

The table tells us first that the annual growth of U.S. National Product is 3.49 percent, or $233 billion per year.

Sources of Growth—Labor Force:

Labor comprises 70 percent of the total value of product in the nation. The number of workers grew at an annual rate of 1.73 percent. In addition, we assume that the labor force increases with increasing median years of schooling, 0.32 percent. The total increment to the labor force is therefore 2.05 percent, and the effect on total output is 70 percent of this, or 1.43 percent.

Sources of Growth—Capital Stock:

Physical capital accounts for the other 30 percent of the value of product. Physical capital stock in use in the nation grew by 3.16 percent. Its impact on total output is 30 percent of this, or 0.95 percent.

Productivity Growth:

The amount of total growth not accounted for by labor or capital is 3.49 percent minus 1.43 percent minus 0.95 percent, or 1.11 percent per year. As indicated above, we assign 25 percent of this productivity gain to college and university research and teaching and 75 percent of the productivity gain to other sources. Thus, 0.28 percent of annual growth, or $18.7 billion, arises from the higher education sector.

Table VI-1. Productivity Gains from Illinois Higher Education Activities

U.S. Sources of Growth[2]			
U.S. National Product			$6,684 billion
Annual Growth		3.49%	$233 billion
Sources of Growth	**Growth**	**Effect on Output**	
Labor force: effect on output is 70%			
Number of workers	1.73%	1.21%	
Schooling[3]	0.32%	0.22%	
Total	2.05%	1.43%	
Physical capital: effect on output is 30%			
	3.16%	0.95%	
Residual growth due to productivity		1.11%	
Due to higher education		0.28%	$18.70 billion
From other sources		0.83%	
Share of Illinois in higher education		5.18%	$0.97 billion annually
Present value of Illinois higher education contribution			
Net interest rate		4%	$24.20 billion

Illinois Higher Education:

Finally, we determine the share of this gain that arises from Illinois higher education. Illinois accounts for 5.175 percent of the students nationally, so this share of U.S. productivity is assigned to Illinois.[4] Therefore, $969 million of U.S. growth each year is due to the activities of Illinois higher education.

Present Value:

Since this increment continues each year, we need to find the amount that one would need to invest to achieve the same gain, i.e., the present value of the stream of income. We choose to be very conservative and assume a net discount rate of 4 percent even though the literature discussed above in Section I: Monetary Benefits to Students would allow us to use a much smaller rate, leading to a much larger benefit from this source. The present value of the productivity gain to the United States from one year of Illinois higher education activity is $24.2 billion. Everyone in society realizes benefits from this gain whether or not they attended college. The gain comes to all through lower prices, better products, and higher wages.

ENDNOTES

1. For example, see N. Gregory Mankiw, Macroeconomics, 1992, pp. 119-121.
2. All data are based on twenty-year growth rates from 1979 to 1999 using the National Income and Product Accounts, U.S. Bureau of Economic Analysis. Series employed are Net National Product, Employees in Private Industry, Investment in Structures and Investment in Producers Durable Equipment. Capital stock is constructed from these data. The share of capital in income is 30 percent and the share of labor is 70 percent.
3. U.S. Census Bureau, Internet Release, December 10, 1998, Median Years of School Completed by People 25 Years Old and Over. http://www.census.gov/population/socdemo/education/tablea-01.txt and our estimates from this table.
4. Share attributable to Illinois is the Illinois share of all U.S. students. Annual incremental dollar value is the product of U.S. net national product, Illinois' share of students, and the growth assigned to higher education.

Climate Model Helps Save Northern Illinois University $500,000

Northern Illinois University meteorology professor David Chagnon has developed a climate model that could help universities in Illinois save hundreds of thousands of dollars in energy costs.

Prior to the 1997-98 El Niño winter, Chagnon advised the NIU heating-plant manager to purchase natural gas at the rolling market price, rather than at a fixed price. He reasoned that the predicted warmer-than-average El Niño winter would translate into higher gas supplies and lower prices as the winter progressed. After assessing other factors involved, the plant manager agreed to follow Chagnon's suggestion. According to Mike Saari, NIU's heating-plant manager, that move saved the university as much as $500,000.

Later during the 1997-98 academic year Chagnon and four of his meteorology students began development of a long-range forecasting model to assist the heating-plant manager in making future natural gas purchase decisions. That statistical forecast model predicted a 79 percent chance that the 1997-98 winter season would experience average or above average temperatures.

The forecast model was accurate. The 1997-98 winter's average temperature exceeded the 46-year winter norm for the area by 5.3 degrees Fahrenheit. Because the winter was unusually warm across most of the northern half of the United States, natural gas prices fell to levels far below the price the university would have locked into during the fall.

The model is being implemented by the university's heating plant. Along with long-term forecasting, the model calls for consideration of such factors as energy storage, demand, and supply—conditions which also influence price. Chagnon and a new set of students are further refining the model.

With deregulation of natural gas providing opportunities to lock into fixed prices, large energy users will increasingly rely on these types of models, says Saari. "Everybody is going to develop some sort of prediction model if they don't have one in place."

According to Ronald McPherson, Executive Director of the American Meteorological Society, this case is only one example of the economic benefits that can be gained from using both short-and long-term weather and climate tools in decision making. "Other industries which are sensitive to weather and climate—such as surface transportation, agriculture, construction and retail sales—are using this information to benefit their bottom line. And there is even greater potential as the data improves and users learn how to best apply it to their decision making."

VII. OUTREACH AND PUBLIC SERVICE PROGRAMS

Institutions of higher education traditionally have had a common commitment to serve the public, the state, and the individual communities where the institutions are located. In addition to making their facilities and resources available to Illinois citizens, Illinois colleges and universities have developed hundreds of outreach and public service activities that serve schools, businesses, government agencies and individuals throughout the state. These public service initiatives are as varied as the academic programs and institutions that have developed them. In this section we will provide estimates of the number of citizens affected by these programs and brief descriptions of several of the projects.

We were able to collect data from nine public university campuses and all of the public community colleges.[1] Some institutions were not able to provide information for all categories. Because these data are not normally reported elsewhere, the institutions do not usually count the participants in many of these areas. Although some of the responses we received were estimates, we believe they are very conservative ones. These data are for the 1998-1999 academic year.

We requested the following information from the institutions:

- ***Volunteers***
  Number of students involved in volunteer projects
- ***Economic and Community Development***
  Number of people served through contract training to business, industry, and government
  Number of citizens participating in public service programs and activities, non-credit job training, general education, and enrichment programs
  Number of economic development units and number of citizens served
  Number of citizens served through extension programs
  Number of visitors to campus for conferences, workshops, and institutes
  Number of students involved in internships in Illinois
- ***Visitors to Campus***
  Number of official visitors to campus (visiting scholars, speakers, performers)
  Number of visitors to campus for athletic events, or number of non-student tickets sold

Number of visitors to campus for cultural events and/or special lectures

Number of visitors to campus facilities open to the public, such as art galleries, museums, or sports/fitness facilities

Number of non-students served by the college library

Attendance at events such as band contests, math contests, etc.

Number of visitors to campus for alumni, parent, or development weekends

Number of visitors to campus for job recruitment, including job fairs

Private institutions also have a commitment to public service and we know that they sponsor hundreds of outreach activities each year. Many have athletic and cultural facilities open to the public, allow non-university-affiliated individuals to use their libraries, and participate in community economic development efforts. Students at private institutions volunteer their time and talents to tutoring and other worthwhile community projects. However, because we had little empirical data on these activities, we did not estimate the number of programs or the number of participants who benefited from private institution outreach efforts.

We provide a count of participants rather than a count of individuals participating. Many people attend not just one but several concerts a year. Some of these individuals may also visit a university museum, planetarium, or art gallery, attend an athletic event, or participate in a continuing education program. We likewise were unable to estimate how many individuals benefit from outreach activities sponsored by more than one institution.

Many visitors who attend university events come from outside of Illinois. Illinois residents who attend events often travel several hours and spend considerable amounts of money in order to participate in an event or program. However, most of the institutions do not keep data on the number of participants who are from outside of Illinois or those Illinois residents who traveled a long distance to attend a college performance. Therefore, we did not estimate expenditures for these individuals. We also did not estimate the monetary benefits of the numerous economic development projects. The public service and outreach programs are beneficial to the state, regardless of any economic benefit that may occur. They provide a rich public resource for the citizens of Illinois, as well as for businesses, government agencies, and schools.

VOLUNTEERS

Most universities have volunteer centers on campus which act as a resource center for students wanting to volunteer their time. At the institutions we surveyed, an estimated 27,300 students participated in volunteer projects during the 1998-1999 academic year. One example of a volunteer project is at Governors State University, where faculty and students from the Department of Early Childhood Education implemented a Parent

Training Program for parents of children from birth to age three in the Crete-Monee School District. At Southern Illinois University at Edwardsville, dental students engage in fundraising activities so that people not covered by state programs, including the children of working poor and the elderly, can receive dental care in the school's clinics. These students typically raise $20,000 a year.

The Volunteer Illini Project at the University of Illinois at Urbana-Champaign is a student-run and student-staffed volunteer organization of 800 students. It operates the Best Buddies Program, the Arts Outreach Program, and numerous blood drives, and also organizes volunteering at daycare centers, hospitals and area nursing homes. The Volunteer Illini Project also runs the Urban Development Project, a task force which addresses the infrastructure, social, and economic goals of targeted low-income neighborhoods by fixing up empty houses, starting after-school programs for at-risk kids, organizing job training, and conducting financial management seminars. Meanwhile at the University of Illinois at Chicago, graduate students and seniors privately tutor clients from ages seven to adulthood for two hours a week through the Remedial Reading Research Clinic.

Illinois universities look beyond their educational obligations and encourage their students to appreciate their civic duty. Coordinating student volunteers is just one way colleges and universities share their vast resources with their communities.

ECONOMIC AND COMMUNITY DEVELOPMENT

Institutions of higher education are an ideal place for local businesses to tap into the expertise of other Illinois citizens. Since 1996 the Illinois Manufacturing Extension Center (IMEC) and its community college partners have performed over 1,000 assistance engagements, including 386 projects for 450 companies. These projects help manufacturers create and retain jobs, modernize facilities, and contribute to a stronger tax base and a prosperous economy. In one example, IMEC's Kankakee Community College field office developed a solution for American Spring Wire, which reduced tangling in the company's wire packaging process. As a result, product reject rates decreased to less than one percent and the company expects a $500,000 increase in annual sales. In another IMEC project, specialists at IMEC's Northern Regional Center at Rock Valley College designed the prototype for a new marine throttle for TD Electronics of Loves Park. The company expects an additional $1 million in annual sales.

Manufacturing is not the only industry benefiting from Illinois higher education. The University of Illinois at Urbana-Champaign's agricultural departments have a variety of extension programs to share the expertise of their faculty and graduate students with Illinois farmers, growers, landowners and their suppliers and advisors. Through its Agronomy Day

Table VII-1. People Served by Outreach and Public Service Programs, 1998-99 Academic Year (in 1000s)

	Public Universities[a]	Community Colleges	Total
Student Volunteers	11.6	15.7	27.3
Internships	12.0	8.1	20.1
Economic Development, Community Development & Extension Programs[b]	1,094.5	230.8	1,325.2
Public Service[c]	202.1	84.8	286.8
Conferences, Institutes, & Other Official Visitors	387.8	525.2	913.0
Athletic, Cultural & Other Events	2,228.9	1,090.0	3,318.9
Recruitment & Job Fairs	16.2	110.8	127.0
Visits for Special Alumni, Parent & Development Events	157.6	41.9	199.5
Libraries & Other Facilities Open to Public	1,462.9	1,087.5	2,550.4

a. Public university campuses included are listed in Endnote 1.

b. Includes people served through contract training.

c. Includes special activities for children, senior citizens and others.

Programs, center educators and campus-based extension faculty summarize and interpret data collected by agricultural researchers to help farmers apply the scholarly results to specific agricultural problems they may be facing. The program also allows feedback from the clients, so researchers can direct future studies toward gaining practical results. In addition to collecting and disseminating agricultural techniques to Illinois farmers, the University of Illinois' extension programs in agriculture also assist farmers with the business aspects of farming. When the 1996 Federal Agricultural Improvement and Reform Act was passed, farmers needed to take a more proactive role in managing their exposure to risk. Through a joint effort by the University of Illinois Extension and the Illinois Farm Bureau, more than 1,400 farmers and agribusiness personnel learned the basics of risk management at 36 county-based workshops, while three statewide teleconferences drew an additional 1,030 participants. Kenneth Waier, a McLeansboro farmer who has benefited from recent risk management workshops, says the education program has helped him become much more confident in his ability to use agricultural commodity options profitably.

More than 20,000 Illinois college and university students participate in internship programs each year. These internships benefit both the students and the businesses and industries involved. Through internship programs, students gain valuable experience in a professional environment and establish a network of contacts. Employers also gain an inside edge on recruitment by being able to observe and evaluate the potential of a future employee.

The universities and community colleges of Illinois not only have a commitment to the education of their students, but are also committed to improving the economic strength of the Illinois business community. The institutions we collected data from had economic development programs which served over 2.5 million people and businesses in the state of Illinois. This confirms the vital role that the institutions play in the economic well-being of the state.

VISITORS TO CAMPUS

Facilities at Illinois institutions of higher education do not exclusively serve students. The campuses are assets available to members of the community. Community members attend athletic events, cultural events such as recitals, plays and concerts, and academic events such as lectures by distinguished scholars. In fact, an estimated 3.3 million visitors attended such events last year. Additionally, the colleges and universities often open certain facilities to the general public, such as art galleries, museums and fitness facilities. College libraries are also open for public use. At the University of Illinois at Chicago alone, over 32,000 non-students are served by its library facilities each year. Statewide, the colleges and universities responding to our survey serve an estimated 364,000 community members per year through their libraries. Each year an additional 2.2 million people utilize other facilities open to the public.

Colleges and universities also hold recruitment and job fairs which are open to members of the community. These job fairs benefit workers and businesses alike by providing a single location where employees and employers can place people in jobs that best match their skills. These job fairs help to keep the labor market efficient, which in turn helps the Illinois economy achieve more of its potential. These jobs fairs along with other on-campus recruitment events draw a yearly attendance of 210,700.

Illinois colleges and universities also host visits from close to 200,000 alumni and parents during special weekend events, and over 6,500 other official visitors (visiting scholars, speakers, and performers), each year. Many of these visits lead to increased revenues for local businesses. We do not estimate how much these visitors spend, but clearly there is a huge economic benefit to the communities and to Illinois.

When examining the benefits of higher education it is easy to become focused only on the economic benefits its institutions provide to Illinois. Yet, Illinois colleges and universities, whether they are private or public, leave an intangible and noteworthy impression on the state and the individual communities. Higher education institutions are committed to more than just providing students with skills for their professional lives. Colleges and universities are also intricate parts of a community and they take this role seriously. Through volunteerism, economic development programs, cultural performances and athletic events, and by opening facilities to the public, Illinois universities and colleges reach out and enrich our society.

ENDNOTES

1. The public universities for which data were collected are: Eastern Illinois University, Illinois State University, Governors State University, Northeastern University, Northern Illinois University, Southern Illinois University - Carbondale, Southern Illinois University - Edwardsville, University of Illinois at Chicago, and University of Illinois at Urbana-Champaign.

Extension Helps Welfare-to-Work Participants

After Congress enacted Welfare to Work legislation in 1996, it soon became clear that many former welfare recipients were not prepared for entry-level jobs. Because foodservice jobs are often a good point of entry into the world of work, University of Illinois Extension and social service agencies teamed up to help welfare recipients overcome obstacles and begin new careers in the foodservice industry.

Although many former welfare recipients had good "people skills" and a positive attitude, they often faced barriers no politician ever dreamed of. "Cars are a luxury that many low-income people can't afford, but few foodservice jobs are located in low-income neighborhoods," according to Carol Schlitt, a U of I Extension nutrition and wellness educator. "Cost and availability of childcare is another huge issue," she said.

In a program offered at various locations throughout the state, Extension staff members and guest instructors provide instruction in food preparation; food safety, sanitation and storage; applying and interviewing for jobs; interpersonal communication and customer service; and employers' expectations. Participants also visit foodservice operations for a behind-the-scenes tour. Although the program's length and format vary depending on the needs of the audience, participants take part in 24 to 48 hours of classroom instruction.

The Welfare-to-Work foodservice training programs have yielded impressive results. More than 475 individuals have graduated from the program, including a group of 65 young people ages 13-17 trained in the Peoria area during the summer of 1999. Approximately 70 percent of these graduates are still working successfully in foodservice or hospitality industry jobs and many of their classmates have taken jobs in other businesses as a direct result of the U of I Extension training they received.

Peoria Methodist Medical Center's director of nutrition services, Alice Price, has been pleased with the quality of the program graduates she has hired. In addition to food preparation and sanitation principles, Extension educators "teach the 'soft skills' like being on time, what an employer expects of you, what kind of shoes to wear, and all those practical skills that aren't always taught along the way," Price said.

"We've found that a lot of former welfare recipients don't have any experience in dealing with constructive criticism from supervisors, getting along with co-workers and so on," Schlitt said. "Mentors in the workplace can help them understand their responsibilities to their employer and the other people they work with."

ACKNOWLEDGMENTS

In the fall of 1998, Keith Sanders, the Executive Director of the Illinois Board of Higher Education, recommended to the Board that it sponsor an economic impact study of Illinois higher education. He believed, accurately, that the total impact of higher education on the state was greater than believed even by informed observers. As a result, the Board approved a Higher Education Cooperation Act (HECA) grant to support this effort. The result was a study that brought forth a cooperative effort among the University of Illinois, Loyola University, Northern Illinois University and Illinois State University. In addition, a myriad of state universities and colleges cooperated in our data gathering efforts.

The effort was organized as part of the Institute of Government and Public Affairs at the University of Illinois and elicited major cooperation from the Bureau of Economic and Business Research at the University of Illinois at Urbana-Champaign. Jerry White of IGPA managed the grant funds and their allocation to multiple universities.

Geoffrey Hewings, director of the Regional Economics Applications Laboratory of the University of Illinois and the Federal Reserve Bank of Chicago, was especially helpful in providing input-output analysis and in the construction of multipliers.

For spending by visitors to students we relied on our own survey conducted by John Lewis and Michael Peddle of the Center for Governmental Studies at Northern Illinois University. For international student expenditures, we incorporated data from a variety of sources, including the Institute of International Education (IIE).

Edward Hines at Illinois State University provided great insight into the higher education process and helped in providing examples of how higher education matters to us.

The visitors' survey research received support from the University of Illinois at Urbana-Champaign, Northern Illinois University, University of Illinois at Springfield, Illinois Wesleyan University, North Central College, Northwestern University, and Western Illinois University. Each of these schools approved the use of the sample survey and, where needed, assisted in getting a list of students to survey. Without their help we could not have calculated reasonable estimates of the very important spending by visitors.

Moreover, we required significant information about each school in Illinois, including characteristics that are not generally available in a published form. Each of the public universities provided help in this way. In addition, Augustana College, DePaul University, Greenville College, Illinois Wesleyan University, Lewis University, North Central College, Roosevelt University, University of Chicago, Loyola University,

Northwestern University, and Columbia College provided specific assistance. Scott Parke of the Illinois Community College Board was particularly helpful in providing data and general information about that sector.

We received significant assistance from faculty and students of IGPA at the University of Illinois who were not specifically part of this project. We are especially grateful to Professor J. Fred Giertz, Sherrilyn Billger, and John Deke, who each helped with analytic issues.

Carol Yoakum and Rich Jachino at IBHE provided assistance with data retrieval and explanation.

Appendix A. Illinois Colleges and Universities Included in This Study

"A" refers to Map A, Downstate Schools (excluding the Chicago metropolitan area).
"B" refers to Map B, Chicago Metropolitan Area Schools.
"C" indicates that the school is in Chicago; due to the density of schools in the city, they are not individually mapped.

○ Public Universities

- C Chicago State University
- A-1 Eastern Illinois University
- B-1 Governors State University
- A-2 Illinois State University
- C Northeastern Illinois University
- A-3 Northern Illinois University
- A-4 Southern Illinois University-Carbondale
- A-5 Southern Illinois University-Edwardsville
- C University of Illinois at Chicago
- A-6 University of Illinois at Springfield
- A-7 University of Illinois at Urbana-Champaign
- A-8 Western Illinois University

▲ Public Community Colleges

- A-9 Belleville Area College
- A-10 Black Hawk College
- A-11 Carl Sandburg College
- C City Colleges of Chicago - Harry S. Truman College
- C City Colleges of Chicago - Harold Washington College
- C City Colleges of Chicago - Kennedy-King College
- C City Colleges of Chicago - Malcolm X College
- C City Colleges of Chicago - Olive-Harvey College
- C City Colleges of Chicago - Richard J. Daley College
- C City Colleges of Chicago - Wilbur Wright College
- B-2 College of Du Page
- B-3 College of Lake County
- A-12 Danville Area Community College
- B-4 Elgin Community College
- A-13 Heartland Community College
- A-14 Highland Community College
- A-15 Illinois Central College
- A-16 Illinois Eastern Community College - Olney Central College
- A-17 Illinois Valley Community College
- A-18 John A. Logan College
- A-19 John Wood Community College
- B-5 Joliet Junior College
- A-20 Kankakee Community College
- A-21 Kaskaskia College
- A-22 Kishwaukee College
- A-23 Lake Land College
- A-24 Lewis and Clark Community College
- A-25 Lincoln Land Community College
- B-6 McHenry County College
- A-26 Metropolitan Community College
- B-7 Moraine Valley Community College
- B-8 Morton College
- B-9 Oakton Community College
- A-27 Parkland College
- B-10 Prairie State College
- A-28 Rend Lake College
- A-29 Richland Community College
- A-30 Rock Valley College
- A-31 Sauk Valley Community College
- A-32 Shawnee Community College
- B-11 South Suburban College
- A-33 Southeastern Illinois College
- A-34 Spoon River College
- B-12 Triton College
- B-13 Waubonsee Community College
- B-14 William Rainey Harper College

● Private Non-Profit Colleges & Universities

- C Adler School of Professional Psychology
- A-35 Augustana College
- B-15 Aurora University
- B-16 Barat College
- B-17 Benedictine University
- A-36 Blackburn College
- A-37 Blessing Rieman College of Nursing
- A-38 Bradley University
- C Catholic Theological Union at Chicago
- C Chicago School of Professional Psychology
- C Chicago Theological Seminary
- C Columbia College Chicago
- B-18 Concordia University
- C DePaul University
- B-19 Dominican University
- C East-West University
- B-20 Elmhurst College
- A-39 Eureka College
- B-21 Garrett Evangelical Theological Seminary
- A-40 Greenville College
- A-41 Illinois College
- C Illinois College of Optometry
- C Illinois Institute of Technology
- A-42 Illinois Wesleyan University
- C John Marshall Law School
- B-22 Judson College
- B-23 Kendall College

Appendix A. Illinois Colleges and Universities Included in This Study (Continued)

● Private Non-Profit Colleges & Universities (continued)

A-43 Knox College
B-24 Lake Forest College
B-25 Lake Forest Graduate School of Management
A-44 Lakeview College of Nursing
B-26 Lewis University
C Lexington College
A-45 Lincoln Christian College and Seminary
A-46 Lincoln College
C Loyola University of Chicago
C Lutheran School of Theology at Chicago
A-47 MacMurray College
C McCormick Theological Seminary
A-48 McKendree College
C Meadville-Lombard Theological School
A-49 Mennonite College of Nursing
B-27 Midwestern University
A-50 Millikin University
A-51 Monmouth College
A-52 Morrison Institute of Technology
B-28 National College of Chiropractic
B-29 National-Louis University
B-30 North Central College
C North Park University
B-31 Northwestern University
A-53 Olivet Nazarene University
A-54 Quincy University
C Robert Morris College
A-55 Rockford College
C Roosevelt University
C Rush University
C Scholl College of Podiatric Medicine
C School of the Art Institute of Chicago
B-32 Shimer College
C Spertus College
A-56 Springfield College in Illinois
A-57 St. Anthony College of Nursing
C St. Augustine College
A-58 St. Francis Medical Center College of Nursing
A-59 St. Johns College
C St. Xavier University
B-33 Trinity Christian College
B-34 Trinity International University
C University of Chicago
B-35 University of Saint Mary of the Lake
B-36 University of St. Francis
C Vandercook College of Music
B-37 Wheaton College

☐ Private For-Profit Colleges

C DeVry Institute of Technology - Chicago
B-38 DeVry Institute of Technology - Du Page
C Harrington Institute of Interior Design
C International Academy of Merchandising and Design
B-39 ITT Technical Institute - Hoffman Estates
B-40 Keller Graduate School of Management

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Appendix A. Illinois Colleges and Universities Not Included in This Study

Private, Non-Profit Colleges and Universities

American Islamic College
Brisk Rabbinical College
Center for Psychoanalytic Study
Chicago Baptist Institute
Chicago National College of Naprapathy
Chicagoland American Institute of Banking
Christian Life College
Finch University of Health Sciences – Chicago Medical School
Hebrew Theological College
Illinois Missionary Baptist Institute
Institute for Clinical Social Work
Institute for Psychoanalysis
Jewish University of America
Knowledge Systems Institute
MacCormac College
Moody Bible Institute
Naes College
Northern Baptist Theological Seminary
Principia College
Ravenswood Hospital Medical Center, H. J. Kutsch School of Nursing
Seabury-Western Theological Seminary
St. Joseph College of Nursing/University of St. Francis
St. Sava Serbian Orthodox School of Theology
Telshe Yeshiva-Chicago
Trinity College of Nursing
West Suburban College of Nursing

Private, For-Profit Colleges

American Academy of Art
American/Illinois School of Professional Psychology
Chicago College of Commerce
College of Office Technology
Cooking and Hospitality Institute of Chicago
Gem City College
Illinois Institute of Art – Chicago
Illinois Institute of Art – Schaumburg
Illinois School of Professional Psychology – Rolling Meadows
ITT Technical Institute – Matteson
Midstate College
Northwestern Business College
Northwestern Business College – Southwestern Campus
Rockford Business College
Taylor Business Institute

Appendix A. Map A: Downstate Schools Included in This Study (excluding the Chicago metropolitan area)

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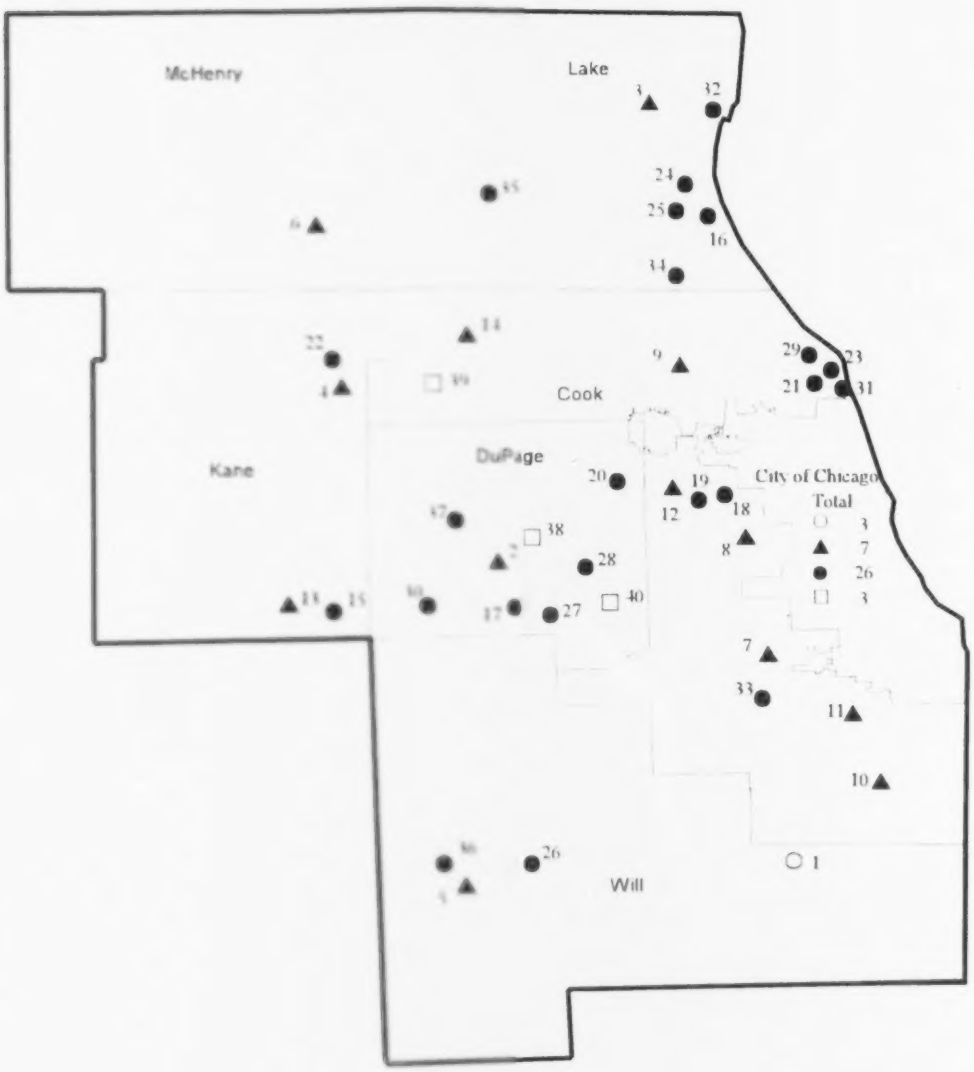
Appendix A. Map B: Chicago Metropolitan Area Schools Included in This Study



Appendix B. Lifetime Value of Additional Earnings for College Years and Degrees($)[a]

	Value of One Year of College			
	Female	Male	Average	
Full-time Equivalent	41,346	91,913	64,190	
		Sheepskin Effect		Total Value
Associate's Degree	116,427	17,772	79,228	207,609
Bachelor's Degree	263,062	328,215	292,413	590,648
Engineering	325,965	388,024	376,655	
Business	324,214	395,635	360,644	
Other	250,137	302,035	271,651	
Master's Degree[b]	76,451	36,189	58,922	187,303
MBA	117,006	50,379	72,749	
Other	71,835	31,146	56,053	
Doctorate[c]	191,164	367,515	297,728	426,109
Education	151,169	278,011	198,383	
Other	202,842	376,125	314,232	
Professional Degree[b]	657,743	1,235,390	991,734	1,248,495
Law	639,714	1,223,414	970,023	
Medicine	894,295	1,711,812	1,361,256	
Veterinary Medicine	406,409	785,796	507,259	
Dentistry	621,177	1,191,837	980,598	
Pharmacy	335,148	648,011	454,669	
Theology	190,043	362,697	314,011	

a. Values include fringe benefits and are expressed in 1999 dollars. This table does not discount for causation.

b. In addition to the value of a bachelor's degree that we assume has already been earned.

c. In addition to the value of both a bachelor's degree and a master's degree that we assume have already been earned.

Appendix C. Enrollment in Illinois Colleges and Universities, Fall 1997

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Full-Time Students					
Undergraduate, Male	56,766	NA	15,005	1,875	93,646
Undergraduate, Female	63,488	NA	46,491	1,536	111,517
Undergraduate Total	120,254	NA	81,498	3,411	205,163
Post-Baccalaureate, Male	10,946	0	16,157	173	27,276
Post-Baccalaureate, Female	10,257	0	14,240	126	24,623
Post-Baccalaureate, Total	21,203	0	30,397	299	51,899
Total Full-Time, Male	67,712	50,811	52,046	4,048	174,617
Total Full-Time, Female	73,745	61,613	62,004	1,662	199,024
Total Full-Time	141,457	112,424	114,050	5,710	373,641
Part-Time Students					
Undergraduate, Male	10,099	NA	9,026	1,088	21,213
Undergraduate, Female	13,260	NA	16,285	1,438	30,983
Undergraduate Total	23,359	NA	25,311	3,526	52,196
Post-Baccalaureate, Male	9,903	0	11,682	936	22,521
Post-Baccalaureate, Female	17,303	0	16,653	541	34,497
Post-Baccalaureate Total	27,206	0	28,335	1,477	57,018
Total Part-Time, Male	20,002	91,146	20,842	3,024	137,014
Total Part-Time, Female	30,563	138,986	33,233	1,979	204,761
Total Part-Time	50,565	232,132	54,075	5,003	341,775
All Students					
Total Enrollment Male	87,714	143,957	72,888	7,072	311,631
Total Enrollment Female	104,308	200,599	95,237	3,641	403,785
Total Enrollment	**192,022**	**344,556**	**168,125**	**10,713**	**715,416**
Full-Time Equivalent	*161,003*	*185,682*	*135,837*	*7,739*	*490,261*

Source: Integrated Postsecondary Education Data System, *Fall 1997 Enrollment Survey*.
Full-time equivalent from IBHE, unpublished data. Data are for institutions listed in Appendix A.
NA: Data not available.

Appendix D. Degrees & Certificates Awarded in Illinois, 1996-97 Academic Year

	Public Universities	Public Community Colleges	Private Not-for-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Associate Degrees					
Associate Degrees, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Associate Degrees, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Associate Degrees Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bachelor's Degrees					
Engineering, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Engineering Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Business, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Business, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Business Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Bachelor's, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Bachelor's, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bachelor's Degrees Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Master's Degrees					
Non-MBA Master's, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-MBA Master's Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-MBA Master's Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MBA, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MBA, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MBA Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Master's Degrees, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Master's Degrees, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Master's Degrees Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Doctorates					
Education, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Education, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Education Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Doctorates, Male	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Doctorates, Female	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Doctorates Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(Continued from previous page)

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Professional Degrees					
Law, Male	239	0	899	0	1,138
Law, Female	167	0	706	0	873
Law Total	406	0	1,605	0	2,011
Medicine, Male	198	0	500	0	698
Medicine, Female	138	0	386	0	524
Medicine Total	336	0	886	0	1,222
Veterinary Medicine, Male	21	0	0	0	21
Veterinary Medicine, Female	58	0	0	0	58
Veterinary Total	79	0	0	0	79
Dentistry, Male	73	0	41	0	114
Dentistry, Female	37	0	30	0	67
Dentistry Total	110	0	71	0	181
Other Professional, Male	68	0	416	0	484
Other Professional, Female	110	0	159	0	269
Other Professional Total	178	0	575	0	753
Total Professional, Male	599	0	1,856	0	2,455
Total Professional, Female	510	0	1,281	0	1,791
Professional Degrees Total	1,109	0	3,137	0	4,246
Certificates					
Less than 2 Years, Male	27	4,266	276	5	4,574
Less than 2 Years, Female	4	6,054	1,048	15	7,121
Less than 2 Years Total	31	10,320	1,324	20	11,695
Post-Master's, Male	37	0	77	0	114
Post-Master's, Female	84	0	127	0	211
Post-Master's Total	121	0	204	0	325
Total Certificates, Male	64	4,266	353	5	4,688
Total Certificates, Female	88	6,054	1,175	15	7,332
Certificates Total	152	10,320	1,528	20	12,020
Total Degrees & Certificates	**41,901**	**33,328**	**43,956**	**1,959**	**121,144**

Source: Integrated Postsecondary Education Data System, *1996-97 Completions Survey*.
Data are for institutions listed in Appendix A.

Appendix E. Expenditures by Illinois Colleges and Universities ($ millions)[1]

FY 1996 Expenditures	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Instruction	$1,000.1	$533.6	$1,370.0	$17.2	$2,920.8
Salaries & Wages for Instruction	$811.6	$421.7	$971.7	$13.8	$2,218.8
Research	$380.0	$0.0	$363.9	$0.0	$744.0
Salaries & Wages for Research	$202.9	$0.0	$166.0	$0.0	$368.9
Public Service	$284.2	$61.2	$28.2	$0.0	$373.7
Salaries & Wages for Public Service	$133.7	$32.6	$13.2	$0.0	$179.6
Academic Support	$263.3	$77.1	$199.1	$3.8	$543.3
Salaries & Wages for Academic Support	$157.9	$44.1	$95.1	$0.6	$297.7
Student Services	$156.4	$115.8	$199.0	$16.9	$488.1
Salaries & Wages for Student Services	$89.7	$68.8	$102.4	$8.9	$269.8
Institutional Support	$328.0	$261.2	$424.4	$10.5	$1,024.1
Salaries & Wages for Institutional Support	$163.1	$87.5	$187.1	$5.2	$442.8
Operation & Maintenance of Plant	$256.2	$155.4	$264.9	$6.1	$682.6
Salaries & Wages for Operation & Maintenance	$111.2	$54.3	$73.2	$0.5	$239.3
Scholarships & Fellowships[2]	$231.3	$107.2	$561.0	$6.8	$906.2
Mandatory Transfers	$21.1	$3.0	$62.8	$0.0	$87.0
Nonmandatory Transfers	($23.5)	$1.3	$203.4	$0.0	$181.2
Subtotal: Educational & General Expenditures & Transfers	**$2,897.1**	**$1,315.9**	**$3,676.8**	**$61.2**	**$7,951.1**
Portion of Subtotal Used for Salaries & Wages	**$1,670.1**	**$709.1**	**$1,608.8**	**$28.9**	**$4,016.8**
Auxiliary Enterprises	$402.5	$98.6	$356.7	$4.7	$862.6
Salaries & Wages for Auxiliary Enterprises	$128.6	$18.7	$57.7	$0.2	$205.2
Hospital Expenditures	$281.2	$0.0	$655.4	$0.0	$936.6
Salaries & Wages for Hospitals	$147.3	$0.0	$307.8	$0.0	$455.1
Independent Operations	$6.6	$1.0	$644.7	$0.0	$652.3
Salaries & Wages for Independent Operations	$1.4	$0.1	$14.3	$0.0	$15.8
Capital Expenditures	$430.6	$138.5	$334.5	$1.6	$905.2
Total Current Funds Expenditures & Transfers	**$4,018.1**	**$1,554.0**	**$5,668.2**	**$67.5**	**$11,307.8**
Total Expenditures (non-hospital)	**$3,736.8**	**$1,554.0**	**$5,012.8**	**$67.5**	**$10,371.2**
Portion of Total Used for Salaries & Wages	**$1,947.3**	**$727.9**	**$1,988.5**	**$29.1**	**$4,692.9**
Total Salaries & Wages (non-hospital)	**$1,800.0**	**$727.9**	**$1,680.8**	**$29.1**	**$4,237.8**

Source: Integrated Postsecondary Education Data System, *FY 1996 Finance Survey*. Data are for institutions listed in Appendix A.

1. FY 1996 in millions of 1999 dollars.

2. Funds given to students for college expenses beyond tuition and fees.

Appendix F. Faculty and Staff at Illinois Colleges and Universities, Fall 1997

	Public Universities	Public Community Colleges	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Full-Time Faculty and Staff					
Full-Time, Faculty	10,098	4,526	10,638	147	25,409
Full-Time, Non-Faculty	27,833	8,211	27,598	322	63,964
Full-Time Total	37,931	12,737	38,236	469	89,373
Part-Time Faculty and Staff					
Part-Time, Faculty	4,262	13,688	6,352	251	24,553
Part-Time, Non-Faculty	13,292	6,187	9,877	302	29,658
Part-Time Total	17,554	19,875	16,229	553	54,212
Grand Total	**55,485**	**32,612**	**54,466**	**1,022**	**143,585**

Source: Integrated Postsecondary Education Data System, *Fall Staff Survey, 1997*. Data are for institutions listed in Appendix A.

Appendix G. Visitor Survey

VISITOR SURVEY

Thank you for helping us by taking a few minutes to complete this confidential survey. Please return this survey, along with your drawing entry, in the enclosed postage paid envelope.

If you are not currently enrolled as a student, please check here _____ and return the survey unanswered.

Visits by Parents or Other Adult Family Members

The following questions are about visits by your parent, parents, or other adult family members made to you during the past year. These questions assume you live in a different community from your visiting parent(s) or adult family member(s), at least during the academic year.

If this does not apply to you, simply answer "None" to the first question, and go to the **Visits by Friends** section.

1. How many times in the last academic year would you say you had a parent or other adult family member visit you? Please include trips made to drop you off or pick you up at school. (If you are uncertain, please estimate the number of times)

   _____ *If none, skip to* **Graduation**

   Please think about the last time a parent visited you.

2. Did your parent(s) travel from in state or from out of state?
   In state ___ Out of state ___

3. How many people visited? _____
   (please include family members and friends that traveled with your parents)

4. Did your parent(s) stay overnight? Yes ___ No ___
   If **yes,** How many nights? ___
   If **yes,** Did your parent(s) stay at a hotel or motel ___
   someplace else ___

5. During the visit did your parent(s) go to restaurants or bars for meals? Yes ___ No ___
   If **yes,** Please estimate the total amount your parent(s) spent at restaurants and/or bars during the last visit.
   - ☐ Less than $25
   - ☐ $25-50
   - ☐ $50-75
   - ☐ $75-100
   - ☐ $100-150
   - ☐ $150-200
   - ☐ Over $200
   - *Please estimate the total amount spent* $ _____

6. During the visit did your parent(s) buy groceries?
   Yes ___ No ___
   If **yes,** Please estimate how much your parent(s) spent on groceries during the last visit.
   - ☐ Less than $25
   - ☐ $25-50
   - ☐ $50-75
   - ☐ $75-100
   - ☐ $100-150
   - ☐ $150-200
   - ☐ Over $200
   - *Please estimate the total amount spent* $ _____

7. During the visit did your parent(s) buy clothing?
   Yes ___ No ___
   If **yes,** Please estimate how much your parent(s) spent on clothing during the last visit.
   - ☐ Less than $25
   - ☐ $25-50
   - ☐ $50-75
   - ☐ $75-100
   - ☐ $100-150
   - ☐ $150-200
   - ☐ Over $200
   - *Please estimate the total amount spent* $ _____

8. During the visit did your parent(s) purchase any other consumer goods or services besides clothing and groceries? This would include books, magazines, hardware, gasoline, and any other purchases.
   Yes ___ No ___
   If **yes,** Please estimate how much your parent(s) spent on consumer goods or services besides clothing and groceries during the last visit.
   - ☐ Less than $25
   - ☐ $25-50
   - ☐ $50-75
   - ☐ $75-100
   - ☐ $100-150
   - ☐ $150-200
   - ☐ Over $200
   - *Please estimate the total amount spent* $ _____

9. During the visit did your parent(s) attend any cultural events such as movies, plays or concerts, or attend any athletic events?
   Yes ___ No ___
   If **yes,** Please estimate how much your parent(s) spent on cultural and athletic events during the last visit.
   - ☐ Less than $25
   - ☐ $25-50
   - ☐ $50-75
   - ☐ $75-100
   - ☐ $100-150
   - ☐ $150-200
   - ☐ Over $200
   - *Please estimate the total amount spent* $ _____

Graduation

If you are not currently a senior, skip to **Visits by Friends**

How many people will be attending your graduation from out of town? _____

Visits by Friends

The following questions are about visits by a friend or friends made to you during the past year. These questions assume a visit by a friend who lives in a different community from you, at least during the academic year.

1. How many times in the last academic year would you say you had a friend visit you? Please include trips a friend made to drop you off or pick you up at school. (If you are uncertain, please estimate the number of times)

   _____ *If none, skip to* **Pre-College Visits**

   Please think about the last time a friend visited you.

2. Did your friend(s) travel from in state or from out of state?
   In state ___ Out of state ___

3. How many people visited? _____

4. Did your friend(s) stay overnight? Yes ___ No ___
   If **yes,** How many nights? ___
   If **yes,** Did your friend(s) stay at a hotel or motel ___
   someplace else ___

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Visits by Friends, continued

5. During the visit did you friend(s) go to restaurants or bars for meals? Yes ____ No ____
If **yes**, Please estimate the total amount your friend(s) spent at restaurants and/or bars during the last visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

6. During the visit did your friend(s) buy groceries?
Yes ____ No ____
If **yes**, Please estimate how much your friend(s) spent on groceries during the last visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

7. During the visit did your friend(s) buy clothing?
Yes ____ No ____
If **yes**, Please estimate how much your friend(s) spent on clothing during the last visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

8. During the visit did your friend(s) purchase any other consumer goods or services besides clothing and groceries? This would include books, magazines, hardware, gasoline, and any other purchases
Yes ____ No ____
If **yes**, Please estimate how much your friend(s) spent on consumer goods or services besides clothing and groceries during the last visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

9. During the visit did your friend(s) attend any cultural events such as movies, plays or concerts, or attend any athletic events?
Yes ____ No ____
If **yes**, Please estimate how much your friend(s) spent on cultural and athletic events during the last visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

Pre-College Visits

Please think back to pre-college visits to college campuses.

1. How many visits did you make to college campuses before you enrolled at your current college? ____
2. How many of these visits were to colleges or universities in Illinois ____ in another state ____

Please think about the last pre-college visit you made to a school in Illinois.

3. Did you travel alone ____
with a family member or members ____
how many people were in your group? ____
with a friend or friends ____
how many people were in your group? ____

4. Did you stay overnight? Yes ____ No ____
If **yes**, How many nights? ____
If **yes**, Did you stay at a hotel or motel ____
someplace else ____

5. During your last pre-college visit did you go to restaurants for meals or go out to any bars? Yes ____ No ____
If **yes**, Please estimate the total amount your friend(s) spent at restaurants and/or bars during the last pre-enrollment visit
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

6. During your last pre-college visit did you attend any cultural events such as movies, plays or concerts, or attend any athletic events?
Yes ____ No ____
If **yes**, Please estimate how much you spent on cultural and athletic events.
☐ Less than $25 ☐ $100-150
☐ $25-50 ☐ $150-200
☐ $50-75 ☐ Over $200
☐ $75-100 *Please estimate the total amount spent* $ ____

7. What college was your second choice?
____

8. What college outside of Illinois was your first choice?
____

9. If there were no colleges in Illinois, would you have attended college in another state? Yes ____ No ____

Personal Information

1. Are you a male ____ female ____
2. What is your age? ____
3. What year are you in school
☐ Freshman or Sophomore
☐ Junior or Senior
☐ Graduate student
☐ Not in a degree program

4. How many hours are you currently enrolled for ____
5. Do you live in
☐ University Housing
☐ Private Residence Hall, Soronty, Fraternity
☐ House or Apartment
☐ With your parent(s)
how far from campus do you live? ____
6. Were you enrolled at this University in the Fall of 1998
Yes ____ No ____
7. When you were applying to college, what was the zipcode of your home address? ____

Thank you for your time in completing this survey. Please enclose the survey, along with your drawing entry, in the postage paid envelope provided.

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Appendix H. Total Expenditures by Visitors[a], 1998-99 Academic Year ($ millions)[b]

	Public Universities	Private Non-Profit Colleges & Universities	Private For-Profit Colleges	Illinois Total
Visitors from Illinois				
Restaurants and Bars	$82.0	$57.3	$3.0	$142.2
Groceries	$23.9	$14.8	$0.8	$39.4
Clothing	$24.2	$19.6	$0.8	$44.5
Other Consumer Goods and Services	$40.5	$26.4	$1.5	$68.3
Cultural or Athletic Events	$18.0	$14.2	$0.5	$32.6
Hotels and Motels	$23.2	$17.6	$0.6	$41.3
Total	**$211.8**	**$149.8**	**$7.1**	**$368.5**
Out-of-state visitors				
Restaurants and Bars	$11.8	$48.6	$0.5	$61.0
Groceries	$3.0	$9.9	$0.1	$13.0
Clothing	$3.5	$17.0	$0.1	$20.7
Other Consumer Goods and Services	$5.7	$16.2	$0.3	$22.2
Cultural or Athletic Events	$2.7	$11.9	$0.1	$14.7
Hotels and Motels	$3.1	$19.8	$0.1	$23.0
Total	**$29.8**	**$123.4**	**$1.2**	**$154.5**
All visitors				
Restaurants and Bars	$93.8	$105.9	$3.4	$203.2
Groceries	$26.8	$24.7	$0.9	$52.4
Clothing	$27.7	$36.6	$0.9	$65.2
Other Consumer Goods and Services	$46.2	$42.6	$1.8	$90.6
Cultural or Athletic Events	$20.7	$26.1	$0.6	$47.3
Hotels and Motels	$26.4	$37.4	$0.7	$64.3
Total	**$241.6**	**$273.2**	**$8.3**	**$522.9**

Source: Survey of students conducted by the Center for Governmental Studies, Northern Illinois University, Spring 1999.

a. Visitors to students and pre-college visitors.

b. In 1999 dollars.

Appendix I. Direct and Indirect Expenditures and Employment Generated by Student and Visitor[a] Spending, by Major Industry, FY 1996 ($ millions)[b]

Expenditures

Industry	Generated by Students	Generated by Visitors	Total
Services (including Higher Education)	$5,736.3	$767.0	$6,503.3
Nondurable Manufacturing	$2,028.9	$284.4	$2,313.3
Durable Manufacturing	$1,438.8	$191.5	$1,630.3
Finance, Insurance, Real Estate	$1,354.7	$196.9	$1,551.6
Transportation, Communication, Utilities	$1,126.8	$98.2	$1,225.0
Trade	$867.6	$296.3	$1,163.9
Construction	$301.2	$44.8	$346.0
Government (except Higher Education)	$135.1	$18.3	$153.4
Natural Resources	$108.9	$24.2	$133.1
Total	**$13,098.2**	**$1,921.7**	**$15,019.9**

Employment

Industry	Generated by Students	Generated by Visitors	Total
Services (including Higher Education)	128.6	20.0	148.6
Transportation, Communication, Utilities	22.6	0.7	23.3
Trade	13.3	6.0	19.2
Finance, Insurance, Real Estate	11.3	1.6	12.9
Nondurable Manufacturing	10.3	1.1	11.4
Durable Manufacturing	7.8	1.0	8.9
Construction	3.3	0.5	3.8
Natural Resources	2.5	0.6	3.1
Government (except Higher Education)	2.2	0.3	2.5
Total	**202.0**	**31.8**	**233.7**

a. Visitors to students and pre-college visitors.

b. In 1999 dollars.

Appendix J. Calculation of Specific Nonmonetary Benefits

In 1997, 187,689 high school graduates became new freshmen at Illinois colleges and universities. Another 51,728 people earned their bachelor's degrees from Illinois schools that year.[1] These two groups of people made critical transitions, from high school graduate to having some college education, or from having some college education to having a degree. We can estimate some of the societal impacts of education by relating the number of people undergoing these transitions to other data on behavior by educational status. In all cases, these will be undercounts, because we are unable to calculate the changes brought about by a transition from freshman year to sophomore year, and so on. However, we are capturing the effects of the two most critical transitions related to higher education: starting and finishing.

For other sections of this paper we find the present value of the impact across the future lifetime of the student. For this section, we consider the cumulative effect of years of lower death rate, higher rate of volunteering and so forth. Therefore, it is more reasonable to find the cumulative impact of the past forty years of university and college activity in the state. We carefully examined data for new students, for total enrollment, and for graduates, and found that the total number of students over this period is 33.5 times the current year level, and that the same ratio provides a conservative estimate for new students and graduation. Therefore we calculated the outcome for the current year and used the factor 33.5 to find the total impact for all past and current students.

Each result applies in the current year and in every year thereafter until most of that cohort of students reaches retirement or death. These results are cumulative with the benefits caused by other years of Illinois educational activity. We do not intend to imply that a college education is the direct cause of each of these benefits, only that there is a relationship. Outcomes have been reduced to 88 percent, the estimated adjustment factor for the amount of change caused by education.[2]

The "some college" population is 6,287,581, the estimated number of new freshmen entering college over the past forty years. The "college graduate" population is 1,732,888, the estimated number of college students graduating with their bachelor's degrees.

1. Mortality

	Mortality rate per 100,000 prime-age adults[a]	difference	Reduced prime-age deaths due to education
High School Graduate	486.5		
Some College	210.7	275.8	15,260
			15,260

a. Centers for Disease Control, National Center for Health Statistics, "Deaths: Final Data for 1996," National Vital Statistics Reports, vol. 47, no. 9, November 10, 1998. Death rates based on population 25 to 64 years old, total of 45 reporting states and the District of Columbia. Excludes "education not stated."

The average risk of death decreases with increased education. The operation of Illinois colleges and universities for the past forty years has resulted in 15,260 fewer deaths of "prime age" people (aged 25 to 64) this year in Illinois.

2. Labor Force and Unemployment

	Labor force participation rate[a]	*diff.*	*Additional members of the labor force*	*Employment rate*[a]	*diff.*	*Newly employed members of the new labor force*	*Newly employed members of the existing labor force*	*Total additional employment due to education*
High School Graduate	65.8%			95.7%				
Some College	74.7%	8.90%	492,443	96.7%	1.0%	476,193	36,408	512,600
College Graduate	80.5%	5.80%	88,447	98.0%	1.3%	86,678	14,809	101,486
			580,890					614,087

a. U.S. Census Bureau, Bureau of Labor Statistics, "Current Population Survey," 1997 (http://stats.bls.gov/cpsatabs.htm, #3). Rates based on 1997 civilian noninstitutional population 25 years and older.

Both labor force participation rates and employment rates for people aged 25 and over increase with increased levels of education. The operation of Illinois higher education institutions for the past forty years has resulted in an additional 581,000 members of the Illinois labor force, and an additional 614,000 employed people, this year. These increases include only the direct relation to education and are in addition to increases related to higher spending in the state.

3. Volunteerism and Charity

Volunteers

	Rate of volunteering[a]	*diff.*	*Total new volunteers due to education*	*Avg. hours volunteered per week*[a]	*diff.*	*Hours/ week from new volunteers*	*Hours/ week from existing volunteers*	*Total additional volunteer hours/week due to education*
High school graduate	43.1%			4.0				
Some college[b]	54.8%	11.7%	647,369	4.0	0.0	2,589,477	0	2,589,477
College graduate	70.7%	15.9%	242,466	4.8	0.8	1,163,835	668,534	1,832,370
			889,835					4,421,847

Charitable Contributions

	Percent who gave to charity[a]	diff.	Total new contributors due to education	Avg. dollars given per year by contributors[a]	diff.	$ millions/year from new contributors	$ millions/ year from existing contributors	Total $ millions/ year due to education
High School Graduate	67.2%			$765				
Some College[b]	74.5%	7.3%	403,914	$1,001	$236	$404.3	$877.5	$1,281.8
College Graduate	82.3%	7.8%	118,945	$1,720	$719	$204.6	$816.8	$1,021.4
			522,860					$2,303.2

a. Virginia A. Hodgkinson, et al., Giving and Volunteering in the United States: *Findings from a National Survey*, 1996 Edition. Washington, D.C.: Independent Sector, 1996. Percentage of surveyed persons who volunteer, average hours per week given by volunteers, percentage of surveyed persons who live in contributing households, and average dollars per year donated by contributing households.

b. "Some college" category for the volunteer and charity calculations was constructed as a weighted average of the "some college" and "technical, trade, or business school" categories given in the source, based on 1990 Illinois educational attainment figures from the Bureau of the Census, *Statistical Abstract of the United States 1996*, table 245.

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People with college experience contribute time and money to charitable causes at a higher rate than those with less education. The past forty years of operation of Illinois colleges and universities have resulted in an additional 890,000 volunteers in this year. The combination of new volunteers and existing volunteers giving at higher rates creates 4,422,000 hours of volunteer time each week, the approximate equivalent of 111,000 full-time jobs. Forty years of Illinois education have also increased the number of Illinoisans who contribute money to charity by 523,000 this year. These new contributors, along with existing contributors giving at higher rates, will donate a total of $2.303 billion to charity this year.

4. Voting

	Percent of population registered to vote[a]	difference	Total additional voter registrants due to education	Percent of population that voted[a]	difference	Total additional voters due to education
High school graduate	62.2%			49.1%		
Some college	72.9%	10.7%	592,039	60.5%	11.4%	630,770
College graduate	78.9%	6.0%	91,496	70.3%	9.8%	149,444
			683,535			780,214

a. U.S. Census Bureau, "Current Population Reports," P20-504, 1996. Table 7, "Reported Voting and Registration, by Age, Sex, and Years of School Completed." Persons reporting that they registered or voted, November 1996, population 18 years and older.

Increased levels of education are associated with the increased likelihood of voting and registering to vote. Forty years of operation of Illinois colleges and universities have added 684,000 registered voters, and 780,000 actual voters, to the Illinois population this year.

ENDNOTES

1. Illinois Board of Higher Education, *1998 Data Book on Higher Education*, Tables I-5, I-6, I-7, and VI-2.
2. Orley Ashenfelter and Cecilia Rouse, "Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins," *The Quarterly Journal of Economics*, February 1998, vol. 113, no. 1, pp. 253-284. Our conclusion is derived from Table III, pg. 265.